CHNOLOGY DEPARTMENT

ccj
COMMERCIAL CAR JOURNAL
THE MAGAZINE FOR FLEET OPERATORS

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DETROIT

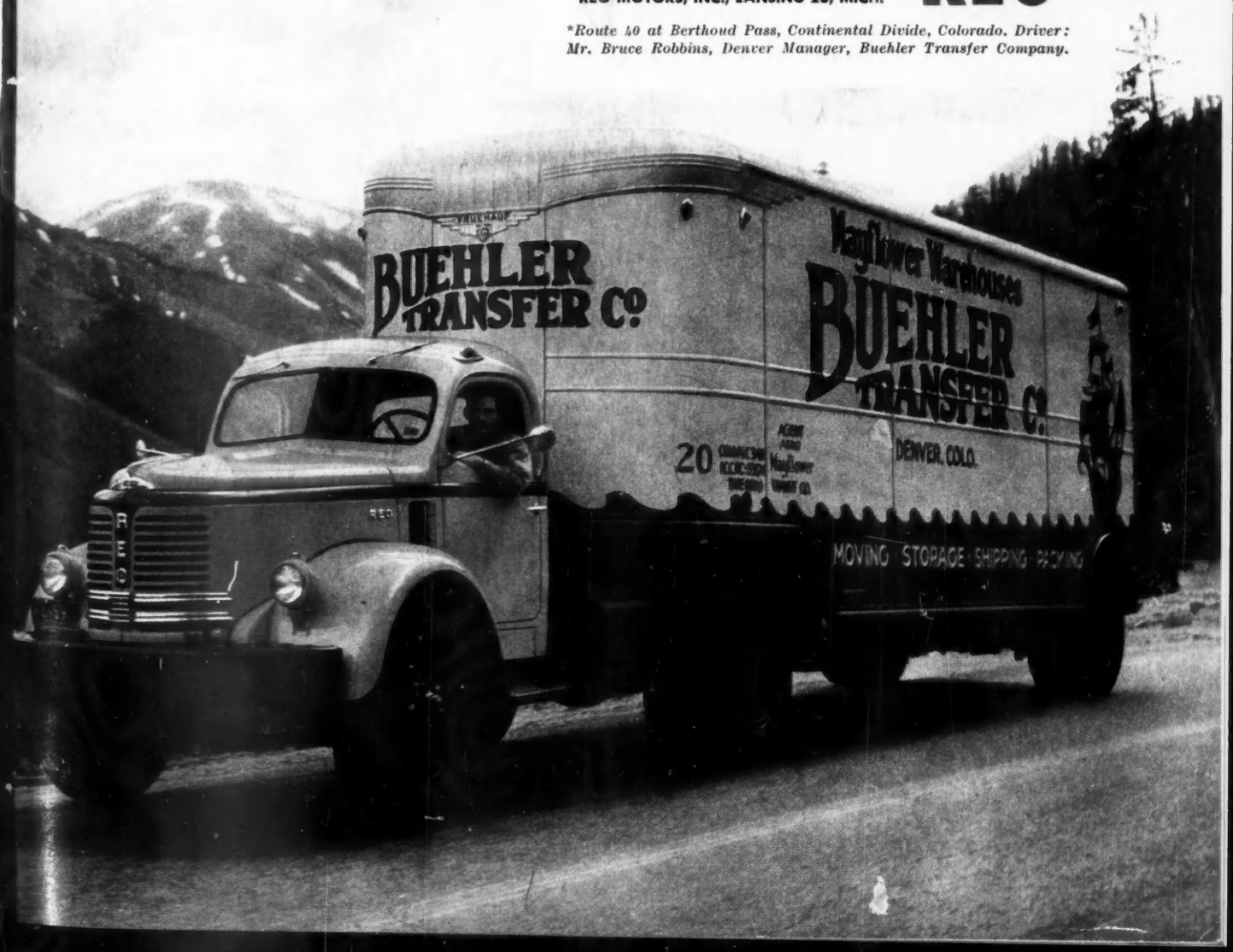
"You take the high road . . ."

On any high road, you'll get there first behind the wheel of a Reo, powered by the all-new Reo Gold Comet engine. Here, 11,315 feet up*, with 140 full-sized horses working under the hood, a fully loaded Reo Model E-22T tractor performs with flatland efficiency. In this test run, throttle response was instantaneous, steep grades melted away. Find out for yourself what Reo Gold Comet Power can do. See your Reo dealer and *. . . you name the test!*

REO

REO MOTORS, INC., LANSING 20, MICH.

**Route 40 at Berthoud Pass, Continental Divide, Colorado. Driver: Mr. Bruce Robbins, Denver Manager, Buehler Transfer Company.*



R v.78 Sept. 1949 - Feb. 1950

OVERLAND HAULERS

BUY DODGE - save money

SAVE . . . with these many money-saving features

ENGINES . . . of famous Dodge L-head design save gas, oil, service expense. Full-pressure lubrication, full-length cylinder cooling, and replaceable prefitted main bearings reduce upkeep, prolong life.



CHASSIS . . . Super-friction clutches, with extra large frictional area; rugged 3-, 4- and 5-speed transmissions; full-floating, hypoid rear axles give better performance, insure longer life. Cross-type steering permits sharper turning, easier handling. Cyclebonded brake linings (no rivets) insure safer stops, prolong lining wear.



CABS . . . Adjustable "Air-O-Ride" seats. Roomy, wide-vision "Pilot-House" cabs, with rear quarter windows, extra-wide seats and "All-Weather" ventilation, insure maximum vision, comfort and safety.



You save money when you buy Dodge *"Job-Rated"* trucks!

There are two reasons for this:

1. Your truck has more money-saving features than any other make of truck built. Many of these are *exclusive* Dodge features.
2. Your *"Job-Rated"* truck is built to fit its job. And trucks that fit the job save on operating costs. They last longer!

Read (at left) a partial list of Dodge truck features that are important to you. Then—see your Dodge dealer for *all* the reasons why a Dodge *"Job-Rated"* truck (priced with the lowest) is the best truck investment you can make.



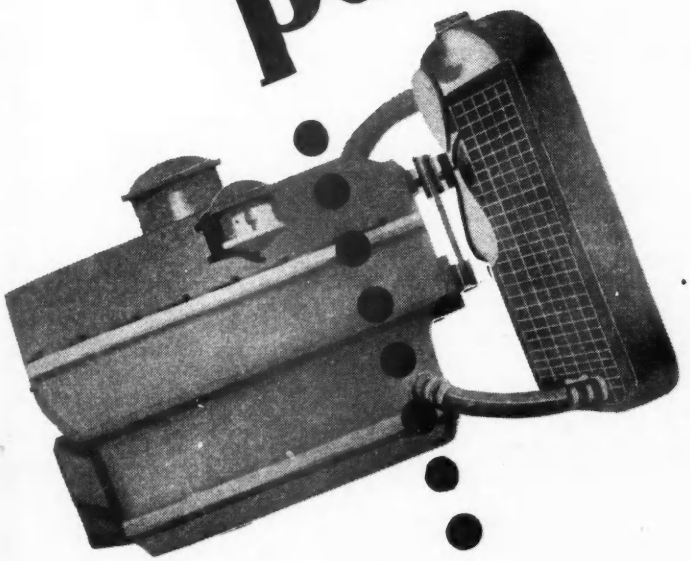


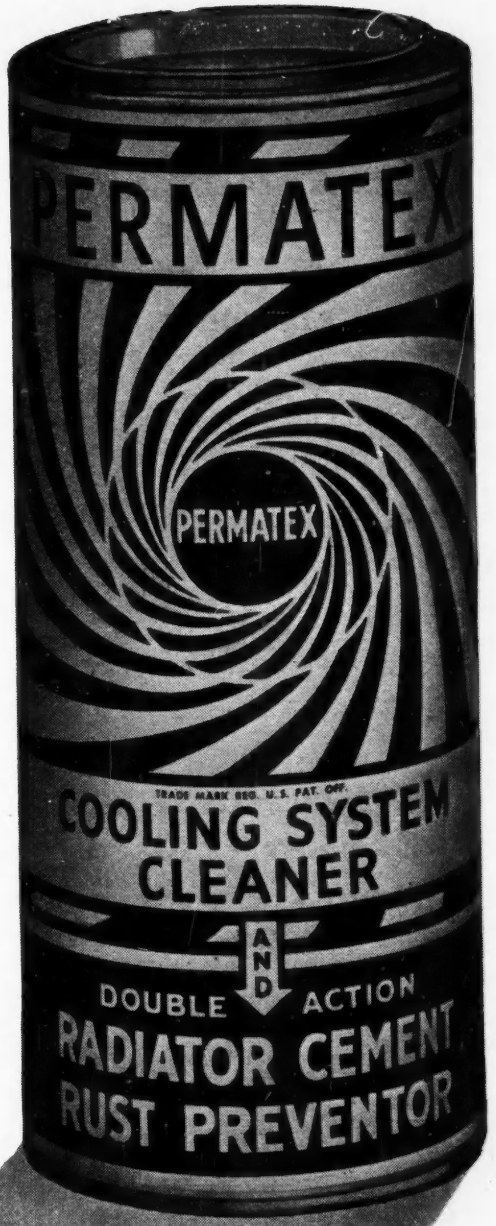
For the good of your business—

Switch to DODGE "Job-Rated" TRUCKS

Tech

3 products in one package





Permatex Cooling System Cleaner is a complete cooling system service in one package. Retails for one dollar.

The upper compartment contains a modern, non-acid cleaner that quickly removes rust, scale, grease and slime in one simple operation. Needs no neutralizer.

The lower compartment contains Double Action Radiator Cement to seal leaks, and Rust Preventor to prevent rust formation.

Order through your Automotive Supply House.

PERMATEX COMPANY, INC., BROOKLYN 29, N. Y.

COMMERCIAL CAR

Vol. LXXVIII Philadelphia, Sept., 1949 No. 1

EDITORIAL CONTENTS

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FEATURE ARTICLES

Engine Parts Survey—Part 4 65
Gloss on the "Flyin' Hoss" 67
Mass Production Maintenance for Bus Fleet 70
Murder in the Fleet Field—Generators 74
Planned PM in New Shop Plan 76
Light Vans for Utility Field Service 78
Accident Analysis Flags Fleet's Mishap Rate 80
The Why and How of Fleet Safety—No. 12 83
Federal's Heavy-Duty Forward Control Unit 85
Mechanics' Work Orders Guide PM 86
Principles of Exhaust Gas Analyzers 88
Eaton Electric Two-Speed Axle Shift 124
Axle and Highway Load Limits 144

DEPARTMENTS

Conference Corner 6
Factory Service News 15
Time Out for Play 22
Detroit Dispatch 27
Washington Runaround 30
CCJ Newscast 35
The Overload 38
Laugh It Off 42
The Bulletin Board 45
Free Publications 48
New Products 49
Shop Hints 72
New Registrations 92
Truck Specifications 94
Introducing 96
Fleetman's Library 106

CCJ Reader Digest



Utility Adopts Vans for Field Service

About a year ago the Atlantic City Electric Co. decided to experiment with light retail delivery vans for underground cable network and other utility field services. The experiment worked out so well that other vehicles were added. The utility favors them because they step up job efficiency, present a nicer appearance, and are economical. Page 78.

Murder of Distributors

This study of distributor failures with photographs of actual breakdowns will show you how to diagnose your troubles and prevent recurrence. Let this illustrated article improve your service and operations. See page 74.

Gloss on "Flyin' Hoss" Lasts 4 Years

General Petroleum Corp., a Socony company, points out that, by doing an extra high quality body refinishing job, the finish lasts twice as long as an average quality job; namely, four years. The procedures, advantages and economic gains are explained in detail, beginning page 67.

Engine Blocks Good for 155,000 Miles

Current Experience Handbook survey shows that, while the range of engine block life varies from 20,000 to 600,000 miles, the majority of fleets average over 155,000 miles. Average life of seven other parts also is tabulated. This article concludes the engine parts series, with a total of 50 engine parts published to date. See page 65.

Yellow Fleet Flags Mishaps

Southwestern fleet uses accidents to cut accidents in an all-out safety campaign. Seven forms provide close control and analysis of factors contributing to accidents. Result: Fleet has cut accident rate to 1.52 per thousand and expects still further improvement. Page 80.

JOURNAL

with which is combined Operation & Maintenance

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World's Largest Bus Fleet

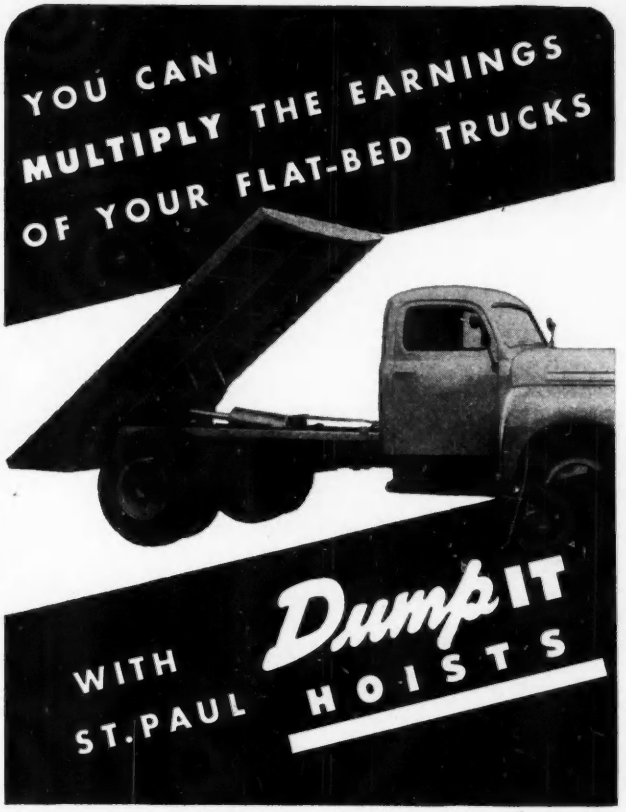
The London Transport Executive, London, England, has organized the repair and maintenance of its 7100-bus fleet on a mass production basis. A vehicle is placed on a moving platform. The body is removed and passed to the body department; the engine is removed and passed on the engine department; all other component units are similarly handled. After the seven departments get through with the reconditioning work, the various components are reassembled, and a good-as-new bus leaves the production line—much in the same manner as in bus manufacturing plants. See page 70.

Exhaust Analyzers

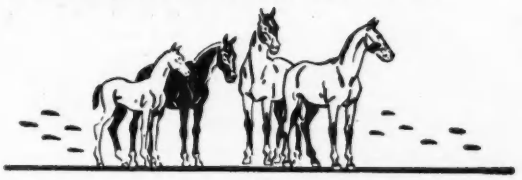
Are you familiar with operating principles of various types of exhaust gas analyzers? This story shows how they work—how they accurately determine combustion efficiency. Eight models of analyzers are illustrated and discussed starting on page 88.

New Shop Plan for Planned PM

New $100,000 terminal and shop provides modern facilities for first class maintenance of 83 vehicles. Shop is 156 ft long and 72 ft wide, with completely equipped tractor, trailer and overhaul areas, bordered by up-to-date offices and a well-planned dock area. Page 76.



Lumber, castings, by-products, waste, farm produce, logs, grain, coal . . . . the list of bulk products that can be handled quicker, easier and cheaper by DUMPING is as endless and varied as the output of industry and agriculture. There are . . .

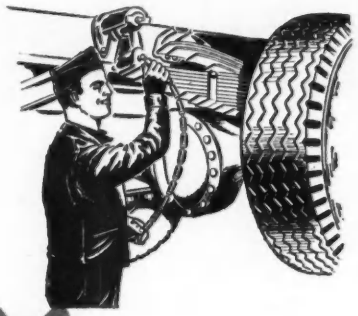


4 ST. PAUL DUMP IT MODELS { **COLT, PONY, MUSTANG, STALLION**

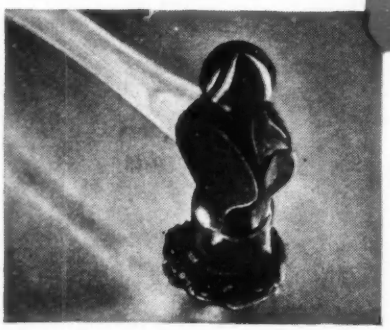
to fit trucks of all makes and sizes. Write us for name of nearest distributor or for complete information on DUMP IT HOISTS' superior features. Please mention this magazine and give truck make, model, year, wheelbase and body length.

ST. PAUL DIVISION
GAR WOOD INDUSTRIES, INC.
2207 University Ave. S.E., Minneapolis 14, Minn.

STOP



LOOK



HIT IT! *Marfak* won't splatter like ordinary grease—proof that heavy loads and rough roads won't hammer it out of spring shackles, tie rods and other chassis parts . . . that *Marfak* gives safer, longer-lasting protection with fewer applications.

LESSEN

maintenance costs



Texaco Marfak assures longer life for all chassis parts

TEXACO

TEXACO

TEXACO MARFAK is the longer-lasting, chassis lubricant that *stays on the job.* Heavy loads and rough service won't squeeze or jar it out of bearings. *Texaco Marfak* seals against abrasive dirt, keeps rust-forming moisture off metal. Parts last longer, maintenance costs less.

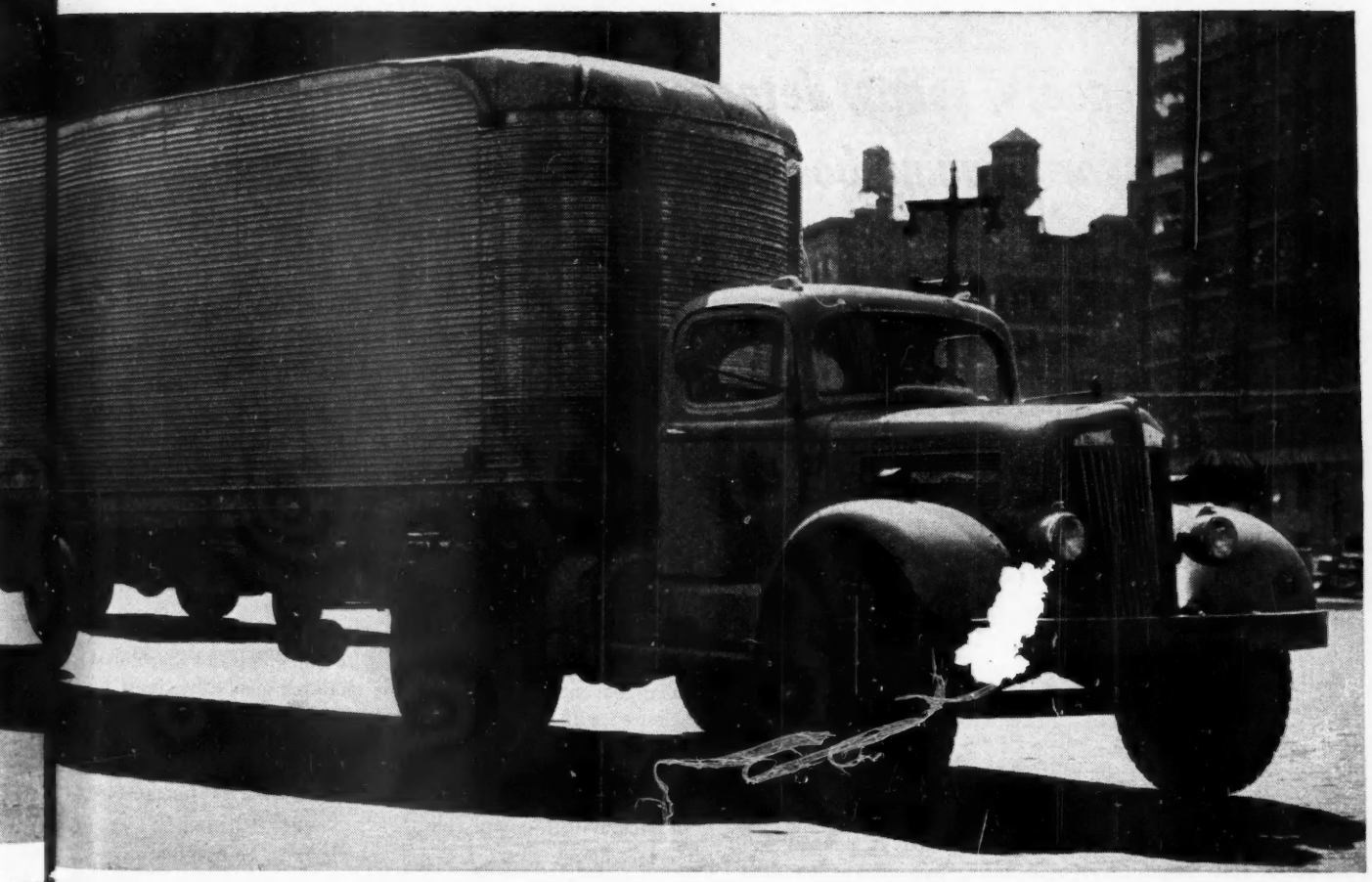
In wheel bearings, use *Texaco Marfak Heavy Duty.* It provides fluid lubrication inside the bearing, but retains its original consistency at the edges . . . sealing itself in (assuring safer braking!), sealing out dirt and moisture. Protects against rust, too. No seasonal change is required.

For lower *engine* maintenance costs, lubricate with *Texaco D-303 Motor Oil.* It is fully detergent and dispersive, keeps engines clean—thus reduces wear, assures better performance and longer life for all engine parts.

Let a Texaco Lubrication Engineer show you how Texaco products can increase efficiency and economy throughout your operation. Just call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write:

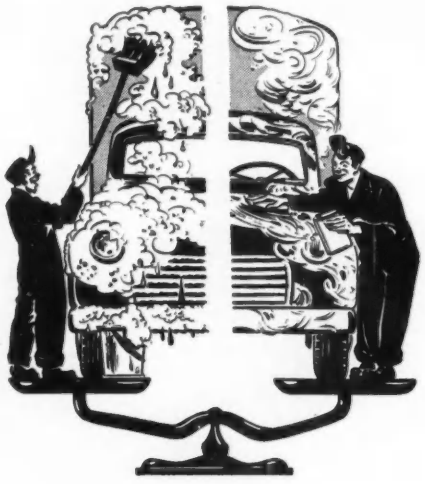
The Texas Company, 135 East 42nd Street, New York 17, N. Y.

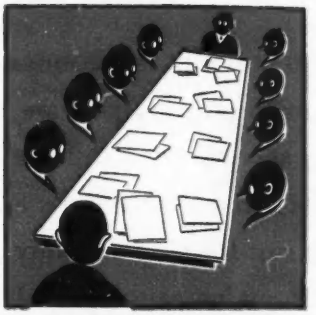
MORE THAN 300 MILLION POUNDS OF MARFAK HAVE BEEN SOLD!



Lubricants and Fuels

FOR THE TRUCKING INDUSTRY





CONFERENCE CORNER

CLEANING VEHICLES

Question:

Pre-wax cleaners, soaps, detergents, plain water—which is the best for cleaning bodies preparatory to polishing?

Recommendations vary with regard to use of soaps or pre-wax cleaners for removing dirt, scum and chalk preparatory to polishing metal surfaces. Some manufacturers suggest use of mild detergents, while others rely on prepared cleaners. It is suggested that the condition of the body, the type of paint and the time element be considered in choosing a cleaning material or method.

Use a Mild Synthetic Detergent

by G. W. Sherin
Chemical Specialties Sales Manager
E. I. du Pont de Nemours & Co.

"We recommend washing cars and trucks with a good synthetic detergent if it is neutral, or almost neutral in character. We realize that there are some strong alkaline cleaners being sold for car and truck washing, but these are likely to be hard on the finishes as well as on the users' hands.

"We market a synthetic detergent which is neutral in character and therefore cannot harm the finishes or the users' hands. Of course, a solution made with our detergent will become alkaline if mixed with an alkaline water but where the water is neutral, you can be sure that the solution will be equally so.

"For cars and trucks finished in lacquers or synthetic enamels, we recommend the use of a good polish. If a longer lasting luster is desired, we recommend the use of a cleaner followed by an application of wax."

Cleaners Will Remove Enamel Chalk

by E. W. Windsor
General Manager, Automotive Sales
The Sherwin-Williams Co.

"A scientific formulation of either a pyroxilyn lacquer or air drying synthetic enamel will gradually chalk, similar to the better exterior house paints. Some colors chalk more or less than others, depending upon the characteristics of the pigments incorporated. Naturally, a car or truck that is constantly exposed to the elements, particularly the ultra-violet rays of the sun, chalks faster than a vehicle that is well protected.

"This chalking, or the natural erosion of the enamel, should be removed. Otherwise it becomes flat and discolored in appearance. Slight cases of chalking can oftentimes be removed with a good soap detergent. In most cases, however, a slight compounding with a mild abrasive is necessary, such as will be found with the better pre-wax cleaners or liquid polishes that not only remove the chalk but restore the original gloss and color.

"Of course, where a motor vehicle is to be touched up or refinished, these pre-wax cleaners or polishes should never be used because they only tend to leave behind a slight oily or waxy surface that prevents the proper bond of adhesion between the old finish and the new coat. In such a case, a specially developed solvent cleaner is required to soften up the old finish so the new will anchor into it rather than lay on top of it."

(TURN TO PAGE 10, PLEASE)



Both seat and back are cushioned with long-wearing, super-comfortable **Airfoam.**

Best of all for the long haul!

YOU can't fool the big-fleet operators. They buy on performance records. That's why you'll find **Airfoam** super-cushioning in the cabs of so many trucks today.

Airfoam far outlasts any conventional cushioning-material. Its millions of tiny air cells don't pack down or lump up. **Airfoam** cushioned seats keep their shape and buoyancy for years and years.

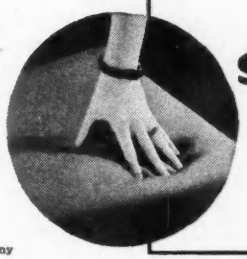
Result: *maintenance and replacement costs are markedly reduced.* Then, too, **Airfoam's** latex foam cellular structure soaks up bumps and jolts, lessens riding fatigue. Long trips are easier on the driver — an important safety factor.

Economy, driver efficiency, comfort — from any standpoint, you'll find **Airfoam** as smart an investment as you can make. Specify **Airfoam** cushioned seats when you order new trucks, or write for further information:

Goodyear
Manufacturers' Sales Dept.
Akron 16, Ohio

Quick test for real comfort

***Airfoam** gives to the lightest touch, comes back the moment pressure is lifted. It's this airy buoyancy that makes **Airfoam** so utterly restful.*



Airfoam

SUPER-CUSHIONING BY GOODYEAR

THE GREATEST NAME IN RUBBER

Airfoam—T.M. The Goodyear Tire & Rubber Company

"We



The
Original Equipment
Line

recommend Sta-ful



JOHN TOLK, Driver
Petty Laboratories, Inc.
San Antonio, Texas



O. C. MATTHEWS
Petty Laboratories, Inc.
San Antonio, Texas

"'Since installing Sta-ful in our fleet, pulling batteries because of dried-out plates is a thing of the past. The new Auto-Lite Sta-ful is really paying its way. Just the battery a busy fleet needs.' This statement of John Tolk shows how our drivers go for Sta-ful." O. C. Matthews, Petty Laboratories, Inc., San Antonio, Texas.

HERE'S WHAT Sta-ful DOES FOR YOU

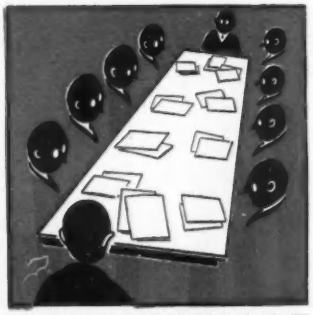
1 Needs water only 1/3 as often.

2 Helps keep plates fully covered for abundant starting power.

3 Reduces time and bother of battery servicing—lasts longer too.

4 Helps reduce operating costs by keeping fleets on schedule.

AUTO-LITE MEANS PRECISION MANUFACTURING



CONFERENCE CORNER

Continued from Page 6

Detergents Superior to Soaps for Metal

by D. C. Miner
Advertising Manager
E. F. Houghton & Co.

"It has been our experience that the modern synthetic detergents are far superior to old type soaps for cleaning of painted metal surface. There are many such detergents on the market and if the shop does not use too strong a solution, they will not harm the finish.

"The big advantage of such detergents is the free-rinsing which is possible because of their combined cleaning and wetting action. When washing pleasure cars it has been found that it is not necessary to use a chamois or polishing cloth but merely to employ the detergent and rinse. No spots will be left after drying.

"Proper detergent will remove grease, scum and traffic film rapidly and efficiently, and will not dull the lacquered finish. To preserve the paint after cleaning it is often desirable to add a wax coating, but we do not recommend one of the combination wax and polishes because the surface must first be cleaned if it is to retain its shine. The use of synthetic detergents will clean and preserve painted metal surfaces with much more speed and efficiency."

Synthetic Detergents Are Mild and Effective

by G. W. Walter
Advertising Manager
Detrex Corp.

"Synthetic detergents should be used prior to any kind of polish. Where there is evidence of paint oxidation, the surface should be rubbed out with a commercial rubbing compound, and then cleaned with a suitable synthetic detergent to remove the deposit of oil which may have been left by the rubbing compound.

"However, in many cases, the user will choose to prepare the surface by cleaning with a detergent, and then use a combination commercial wax and cleaner. This combination material cleans and polishes with one application; the material being rubbed on to the surface, allowed to dry, and then rubbed or lightly polished off.

"Under all circumstances, the surface should be as clean as possible before any wax or other protective coating is applied. The new synthetic type detergents appear to work most satisfactorily because they are very mild in their action, because they do not attack the paint, and they have the property of readily removing bug deposits because they soften and remove the protein residue."

Use Recommended Cleaners For Aluminum Bodies

by C. S. Harris
Assistant to Vice President
Kelite Products, Inc.

"In view of the fact that more and more large fleet operators are using trucks whose bodies are fabricated from aluminum, we recently developed an aluminum cleaner for regular maintenance cleaning of this type of equipment. It will remove the diesel smoke stains and will sustain the natural luster of the metal by removing normal soils, haze and light oxidation.

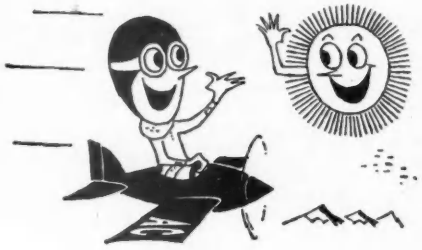
"While the above will leave the metal shiny and new looking, some operators prefer to use a wax base aluminum polish. Regular maintenance washing with a foam will in itself keep the paint in excellent condition. However, for those who choose to wax their equipment, the regular use of this material is entirely safe since it will not harm a waxed surface."

(TURN TO PAGE 142, PLEASE)

Buyers' Directory Preview——————November

When you want to buy a truck, a turn signal, a valve refacer, or any of about 4000 items needed for the operation and maintenance of your vehicles, do you always know just where to buy them?—Who all the leading makers are? You will—when CCJ's First Annual Buyers' Directory for Fleet Operators makes its debut in November. In this comprehensive alphabetical listing of all products needed for the truck fleet field, virtually all manufacturers will be included so that you can determine quickly where to locate the type of tools, accessories, parts, supplies, you require. You will want to keep this handy reference issue on top of your permanent file. It will save you valuable time.

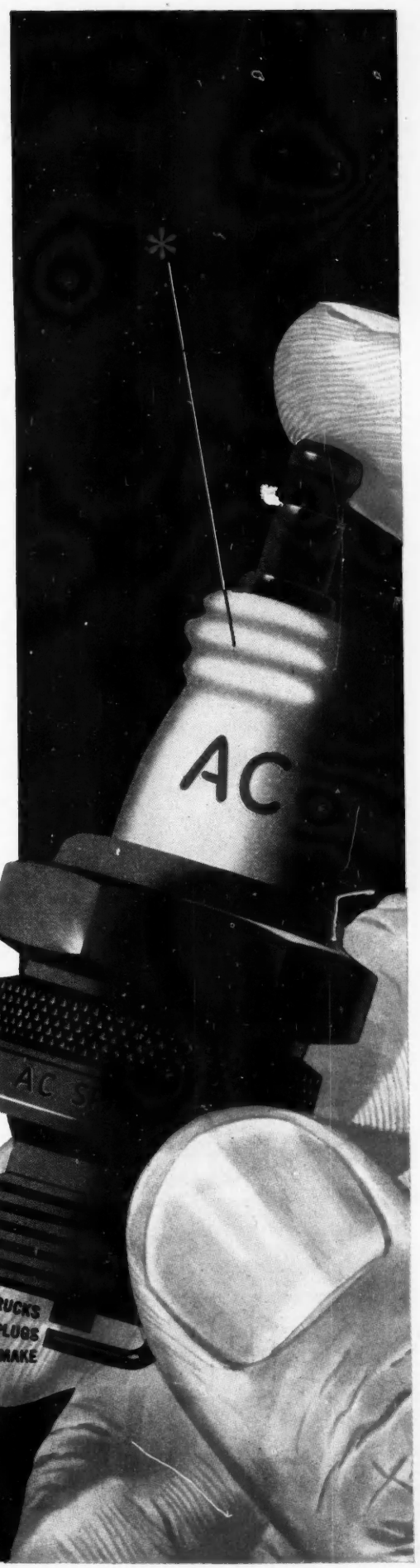
a new high...



● **A New High in spark plug reliability.** If you're interested in improving your spark plug performance, investigate commercial type AC Spark Plugs with patented CORALOX Insulator.* While each type has a much wider Heat Range, the new patented CORALOX Insulator ensures more exact control of that range—no matter how severe the service. Consequently, you'll get five definite advantages:

You'll get longer plug life and greater reliability. Engines will start easier, in any weather. The plugs will foul less, and misfiring will be virtually eliminated. It's a simple matter to prove these statements for yourself. Why not take advantage of the new "high" in plug reliability which AC Spark Plugs with patented CORALOX Insulator have established?

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION



* AC's patented processes make Coralox the finest insulator in spark plug history. Improved electrical insulation, no matter how high the temperature. Better heat conduction. Maximum resistance to heat shock. Less fouling. Harder, stronger, longer-lived.

AC SPARK PLUGS

NEW PERFORMANCE

. . . . . they're

WALKER

with the



8 MODELS
1½ to 50 tons capacity

WALKER *leads in* JACKS

• NEW DEPENDABILITY • NEW SAFETY
all yours in the New Deluxe

"SERIES 900" *portable hydraulic* JACKS
new projectile tank

● Few products in the field of hydraulic lifting equipment have so fine a background of performance, dependability, and safety as the new Deluxe Walker "Series 900" Portable Hydraulic Jacks. Backed by years of careful, constantly refining engineering, they have a continuing approach to true perfection. Years of manufacturing "Know-How" . . . precision production . . . inherent fine quality have been compressed into these fine hydraulic jacks.

The new "Projectile" tank—designed in the shape of a heavy armor piercing shell—withstands greater shock . . . distributes the weight of the load more evenly, more completely to the heavy base . . . resists damage from eccentric loading which every jack is subject to.

But the "Projectile" tank is not the only new feature that distinguishes the new Deluxe "Series 900." Cup leathers have been redesigned and improved . . . new tolerances and "quality controls" assure more positive packing . . . and in models of 5-ton capacity or more, the revolutionary new Walker "I. S. D." power cylinder assures longer service and finer performance.

★ ★ ★

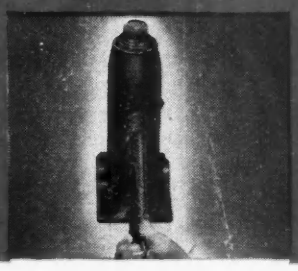
Yes, these are great jacks—great not only in their finer precision manufacture, their rugged "can-take-it" construction, their smooth dependable operation—but great because the combination of all these outstanding characteristics create a dollar-for-dollar value that cannot be duplicated.

WALKER MANUFACTURING CO. OF WISCONSIN • RACINE, WISCONSIN

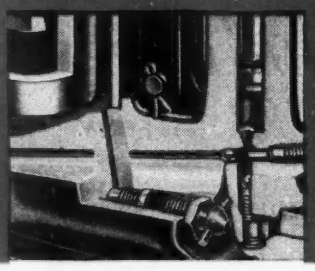
Also Makers of Walker Lifts, Silencers, Oil Filters

FEATURES LIKE THESE MAKE WALKER "SERIES 900's" THE LEADER IN PORTABLE HYDRAULIC JACKS

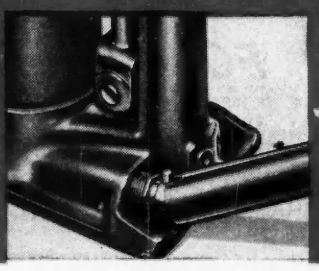
"PENDULUM BALANCE" FOR EASY POSITIONING. Jack automatically takes upright position when lifted by handle—saves time and tempers when placing.



"RYTH-MATIC" VALVE ACTION. Suction and discharge valves, working in perfect synchronization at lightning speed, assure efficient performance.



"MICRO-ACCURATE" RELEASE. Enables operator to lower load, easily, safely, at any desired speed—well away from danger.



"SOLID END" LIFTING RAM. Provides extra strength to resist the bending force from side thrusts at top height.

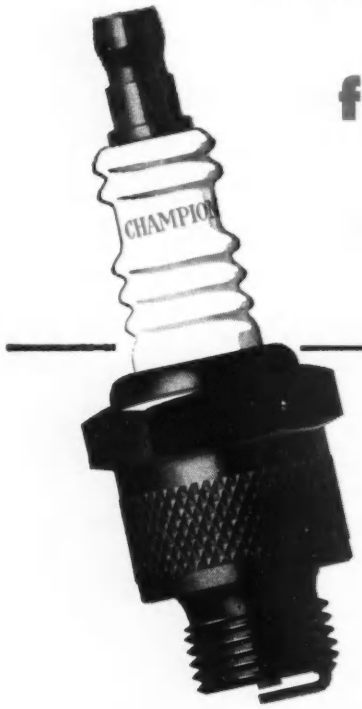


DEPENDABLE

CHAMPION

SPARK PLUGS

"Fleets that cut every possible corner on operating costs usually find the business road well banked on the curves!"



for over a quarter century most fleets have used

Champion Spark Plugs

because records prove they deliver lower cost per ton mile performance

FOLLOW THE EXPERTS

DEMAND DEPENDABLE CHAMPIONS FOR YOUR FLEET

CHAMPION SPARK PLUG COMPANY, TOLEDO 1, OHIO

Listen to the CHAMPION ROLL CALL . . . Harry Wismer's fast sportscast every Friday night, over the ABC network

factory SERVICE NEWS

Briefed for Fleets From Manufacturers' Bulletins

Autocar Carburetor Adj. . . . Chevrolet Steering Tips . . . Diamond T Oil Pressure Adj. . . . GMC Engine Changes . . . IHC Valve Insert Rings . . . Studebaker Steering

Autocar

Holley 885-JJSG Carburetor Adjustment

To check the float setting on this model carburetor remove the float chamber cover and holding it upside down measure the distance from the surface of the float chamber to what would normally be the underside of the float. This should be 1 5/16 in. To correct float setting bend the float lever arms as required.

Idle adjustment is made with two adjusting needle valves. Turning them to the left provides a richer mixture, while turning to the right gives a leaner mixture.

For summer operation the accelerating pump link should be placed in the first hole, nearest the pivot to provide the shortest stroke. For cold weather operation, adjustment should be made to provide the maximum stroke.

Chevrolet

Upper Control Arm Shaft

When installing a new upper control arm shaft into the spring housing tower of the 1949 passenger car, it is necessary to lubricate the threads of the shaft where they enter the spring housing to prevent tearing of the threads during installation.

If not lubricated, the threads will tear and the shaft will be loose in the spring housing tower after installation.

Steering Idler and Third Arm

Field complaints have been received regarding stripping of the threads on the upper bolt attaching the steering idler and third arm assembly to the front suspension cross member. Investigation has disclosed that this stripping was usually caused by the premature tightening of the two lower attaching bolts which forced the upper bolt hole out of position. When this hole was forced out of position and an attempt was made to install the upper attaching bolt, the bolt would bind against the side of the bracket hole and the bolt threads were stripped when the bolt was tightened.

Steering Wheel Removal

Reports have been received where the steering gear mainshaft bearing races were brinelled and some instances have also been reported where the steering gear mainshaft was driven through the lower worm making steering gear adjustment impossible.

Investigation has shown that these conditions apparently were the result of improper removal of the steering wheel to permit installation of accessory wheels.

When a steering wheel is removed from a 1949 passenger car or truck, puller J-2927 should be used.

Diamond T

Oil Pressure Adjustment

Oil pressure on Diamond T engines is automatically controlled by adjusting spring tension which controls a relief or by-pass valve. On JX and QX models remove the pipe plug on the left side of oil pan, loosen lock nut and turn screw in for increased pressure and out for decreased pressure. The part number of the wrench is 11381W.

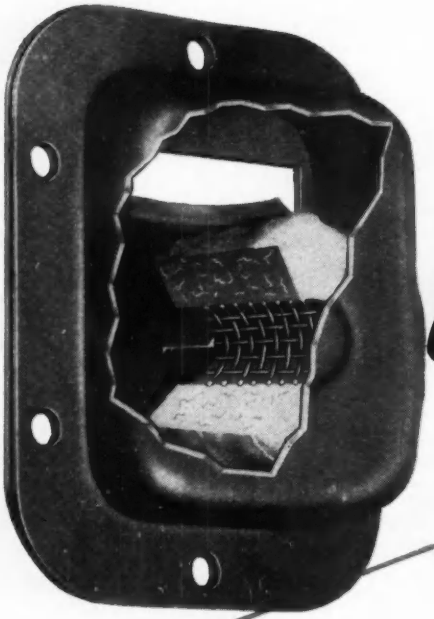
On WX models remove acorn nut at base of oil filter to get at adjusting screw. Loosen lock nut and turn adjusting screw in to increase, out to decrease oil pressure. On TDX models the adjusting screw is under the acorn nut at base of oil filter. On the Continental model R6572 oil pressure adjustment is made at the oil pump which is accessible through a hand hole opening in the bottom of the oil pan. On Continental model T6427 adjustment is made at the left side of engine below distributor. To increase pressure remove shims, and to decrease pressure add shims.

General Motors

"H" Model Engines, "A" Model Trucks

"A" model engines (278, 308, 361, 426, 451, 477) will be discontinued for service as soon as present stock is exhausted. "H" model engines (318, 360, 426, 503) with special installation kits will be made available for "A" model trucks.

(TURN TO PAGE 18, PLEASE)



For CLEAN Gear Oil...

$6.95

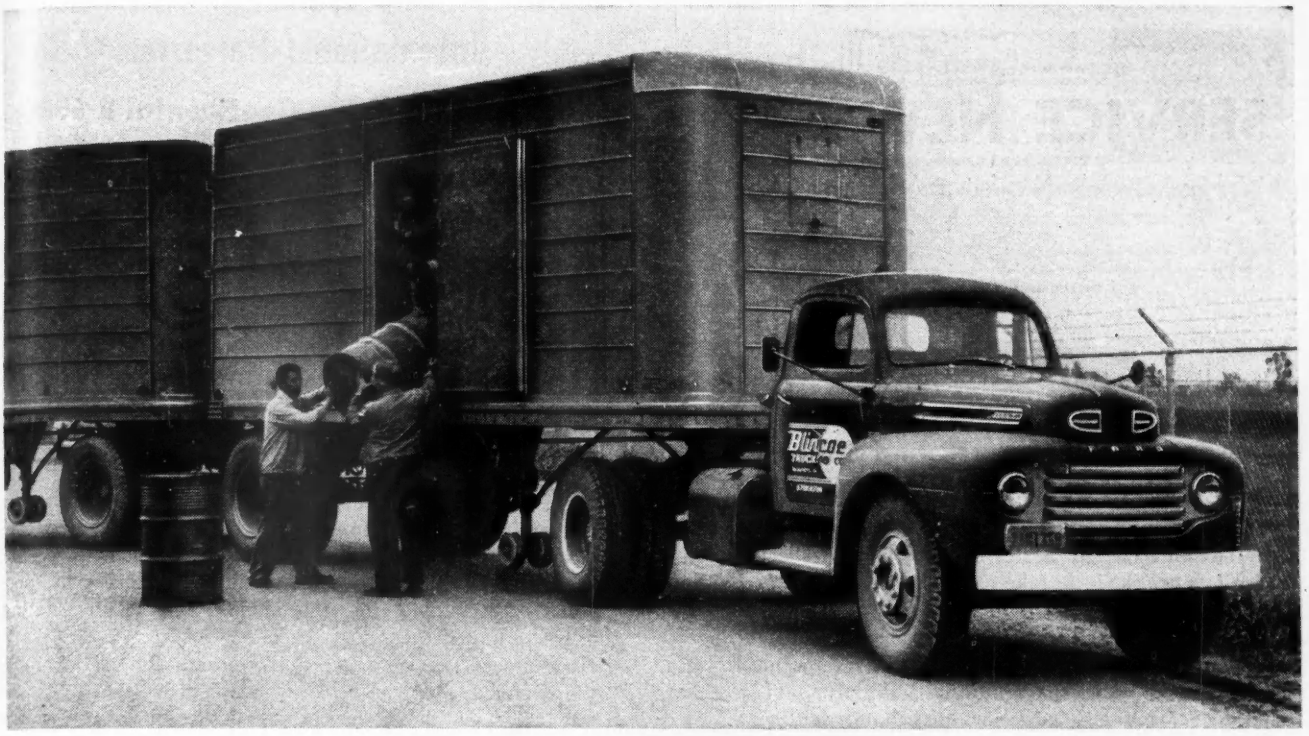
LIST PRICE

Equip your transmissions with inexpensive Fuller Transmission Oil Filters—easily installed on all Fuller Transmissions and most other makes. The new Fuller Filter keeps gear box oil clean between changes. Normal pressure of rotating gears forces the oil through a cleansing filter element and returns it to the gear box. Clean oil saves wear and tear on moving parts—saves you money on parts, labor and down-time. Write for more information.

Fuller TRANSMISSION OIL FILTER

FULLER MANUFACTURING COMPANY (Transmission Division), KALAMAZOO 13F, MICHIGAN

Unit Drop Forge Division, Milwaukee 1, Wis. • WESTERN DISTRICT OFFICE (SALES & SERVICE—BOTH DIVISIONS), 1060 E. 11th Street, Oakland 6, Calif.



ROADSIDE REPORT *by F. E. Blincoe, Jr., of Stockton, California. Ford Model F-8 shown has a Gross Vehicle Weight rating of 21,500 lbs., Gross Train Weight rating of 39,000 lbs.*

"We pull heavier loads because of the light tare weight of our FORD F-8!"

"WE BOUGHT our Ford F-8 for local shuttle work," reports F. E. Blincoe, Jr. "However, we found it necessary to use it for both long and short line full loads in order to maintain legal load limit. We pull heavier loads because of the light tare (curb) weight of our Ford F-8. To date our Ford has in excess of 20,000 miles and the only expense has been a set of spark plugs, a set of points and a fan belt."

In terms of *Payload-Performance* the Ford BIG JOBS have no equal in their class. No other truck offers so much payload capacity in relation to chassis weight, with as high a horsepower rating per gross ton. This means bigger payloads within legal load limits. It means faster, more profitable delivery of big loads. Ford's high *Payload-Performance* is evidence of Bonus Built construction. Each of over 150 Ford Truck models is Bonus Built . . . built extra strong to last longer.

FORD 1949 *Bonus Built* TRUCKS 1959

BUILT STRONGER TO LAST LONGER

USING LATEST REGISTRATION DATA ON 6,106,000 TRUCKS, LIFE INSURANCE EXPERTS PROVE FORD TRUCKS LAST LONGER!

ONLY THE FORD BIG JOB HAS ALL THESE FEATURES

- ★ New 145-h. p. Ford V-8 engine for top performance.
- ★ Ford concentric dual-throat carburetor for more power, more economy.
- ★ New heavy duty 5-speed transmissions—overdrive or direct-in-fifth—for operating flexibility.
- ★ Big Ford power-operated hydraulic brakes; front 16-inch by 2¼-inch; rear 15-inch by 5-inch double cylinder on F-7, 16-inch by 5-inch double cylinder on F-8. Air brakes also available for F-8.
- ★ Ford Super Quadrax single speed axles; two-speed axle available in Model F-8.
- ★ Large diameter (10-inch) wheel bolt circle with 8 studs to allow for extra-strong hub construction.
- ★ Million Dollar Cab with Ford Level Action suspension for greater driving comfort.
- ★ Nationwide service from over 6,400 Ford Dealers.
- ★ Ford Bonus Built construction for long truck life.

Gross Vehicle Weight ratings: F-8 up to 21,500 lbs., F-7 up to 19,000 lbs. Gross Combination ratings: F-8 up to 39,000 lbs., F-7 up to 35,000 lbs.

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factory
SERVICE NEWS

Briefed for Fleets From Manufacturers' Bulletins

Continued from Page 15

GMC—continued

("A" Series 278 and 308) ("H" Series 318 and 360)

To increase power "H" series manifolding can be physically mounted on "A" Series cylinder head if special manifold pilots are made to take care of difference in port sizes. However, while no tests have been made we are sure very little would be gained without the larger valves and cylinder head ports. The cost would be excessive for the amount of power increase since the following material would also be required—carburetor, governor, distributor with governor drive, air cleaner and complete exhaust system.

"H" series cylinder head will not fit the "A" series cylinder block. Due to larger valves and ports, the bolt spacing is changed. "H" series cylinder block will not fit crankcase, bolt spacing is different. "H" series crankshaft is longer than "A" Series.

("A" Series 361, 426, 451, 477) ("H" Series 426, 503)

Manifolding and cylinder head problem is the same. "H" series cylinder block will fit "A" Series crankcase. "H" series crankshaft same as "A" Series on the 426, 451, and 477 engines. New crankshaft required for 361.

Recommendations are that when increased power is required, the new "H" series engine be used with installation kits since the cost of material and labor to change over the "A" series engine would make a changeover impractical.

FWD

Overheating Problems

In cases where the "H" series trucks continue to overheat, the operator should consider the following. At a very low rate of speed a certain amount of recirculation of warm air developed. The air warmed by the engine has a tendency to return through the openings between the radiator core and shell as well as under the bottom of the core. This condition can be corrected by installing a piece of canvas between the radiator core and shell to close the openings. A piece of sheet metal can be installed in front of the radiator core at the lower edge of the bottom reservoir to deflect the warm air at that point.

In extreme cases it may be necessary to change the fan blades to correct the overheating of these engines. Factory tests show the following modifications to be effective:

On model BZ change from an 18-in. 4-bladed fan to an 18-in., 6-blade.

On model MZA engine change from an 18-in. 6-bladed fan to a 20-in., 6-blade.

On model SRKR change from a 20-in. 6-bladed fan to a 22-in., 6-blade.

International Harvester

Valve Insert Ring—Continental R-6586 Engine

Exhaust valve insert ring IH No. 78 692 R1 is a standard size insert ring for the Continental R-6586 engine. However, the insert ring supplied for service under this part number was a .10-in. oversize, and is the correct size insert ring to be used when making replacement of a standard size insert ring.

The .10-in. oversize ring will be carried under IH No. 83 479 R1 and will be supplied on all orders for the 78 692 R1.

Brake Anchor Pins S-200-P, U-200-P Axles

In order to insure proper brake operation and maximum life of brake anchor pins used on the above models, the anchor pins should be lubricated when brake cleaning procedure is performed or when relining brake shoes. Pressure fittings are not provided at the anchor pins due to the possibility of over-lubricating the assembly and contaminating the brake lining.

Brush coat the surfaces of the brake cam, roller pins, rollers, anchor pins and brake bosses with suitable lubricant comparable to "Lubri-plate" (do not use chassis lubricant or gear oil) before assembly. After assembly apply another coat of lubricant to the exposed surfaces of the anchor pins before installing the seal felts, retainers and retainer lock rings.

Plymouth

Clutch Size Marking

Plymouth cars equipped with the special 10-in. or 11-in. clutch can be identified by the number stamped on the machined pad located on the top of the cylinder head at the rear.

No. "10" indicates the car is equipped with a 10-in. clutch; No. "11" indicates an 11-in. clutch.

Studebaker

Steering Knuckle and King Pin—M5

The greater king pin and bushing area in use on the 2R5 and 2R 10 model trucks can be obtained for the M5 by installing the 2R series steering knuckles and king pins. The advantages in making such an installation are increased ease of steering and longer potential life of the parts. Parts Nos. 677604, 677605 and 678171 are required to make the conversion.

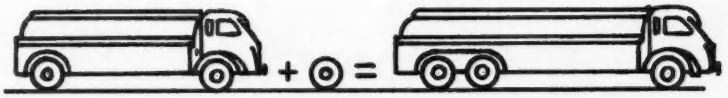
Wiper Blade Travel—2R Series

It is possible that the pointed outer end of the windshield wiper link on the left side of the truck may strike the pin in the blade arm, thus restricting travel of the blade and causing noisy operation.

To correct this condition remove the mounting bracket and slot the round bolt hole. Reassemble and adjust the bracket to obtain ⅛ in. clearance between the end of each link and the pin when the wiper blades are at the extreme outer limit of their travel.

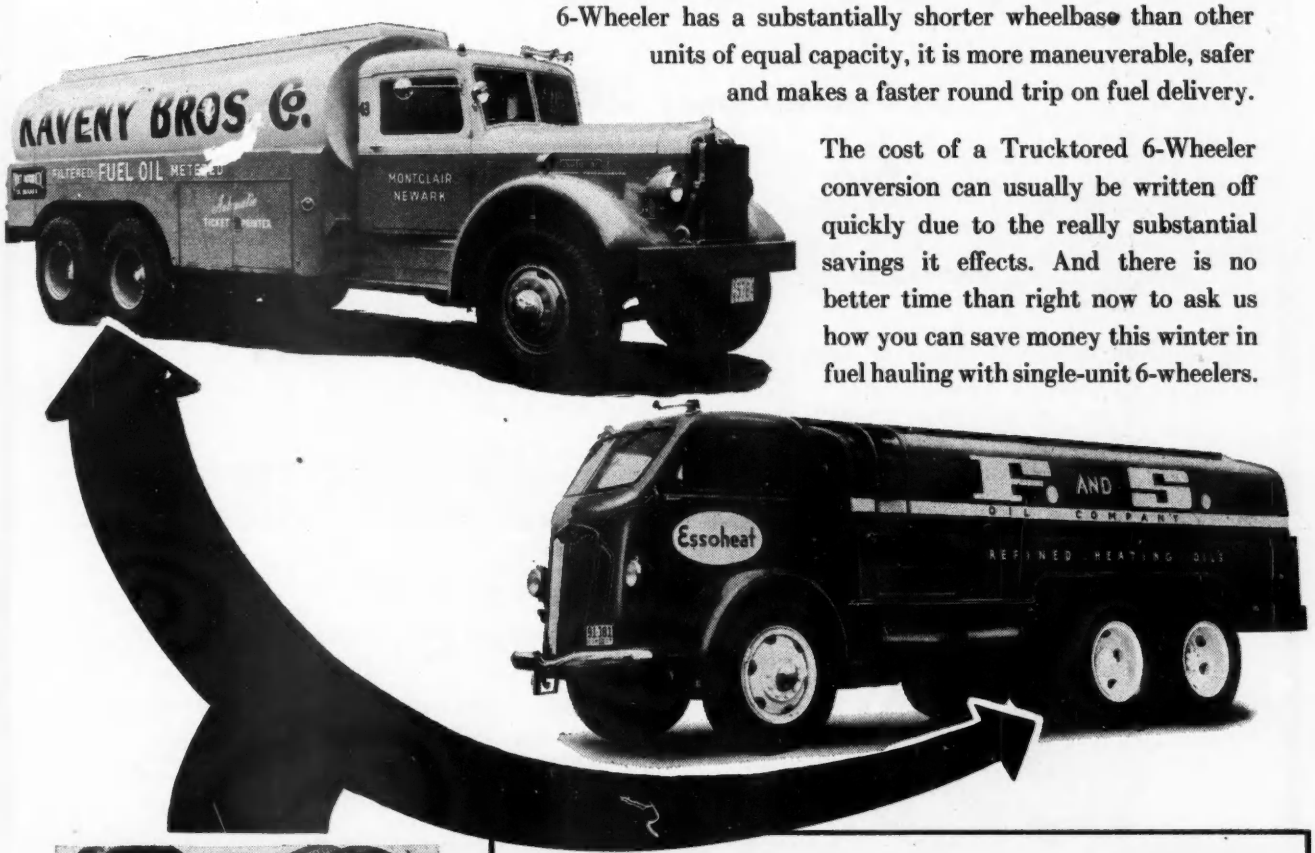
For economical winter fuel hauling

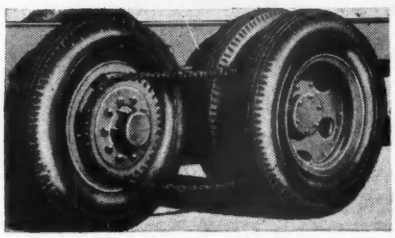
convert *NOW*



Trucktored 6-Wheeler Conversions have no equal for hauling solid and liquid fuels—when it comes to low operating costs. Since the Trucktored Single-Unit 6-Wheeler has a substantially shorter wheelbase than other units of equal capacity, it is more maneuverable, safer and makes a faster round trip on fuel delivery.

The cost of a Trucktored 6-Wheeler conversion can usually be written off quickly due to the really substantial savings it effects. And there is no better time than right now to ask us how you can save money this winter in fuel hauling with single-unit 6-wheelers.





TRUCKTOR Detachable Chain-and-Sprocket 4-Wheel Drive.

● Trucktor Detachable Chain-and-Sprocket 4-Wheel Drive is obtainable only with Trucktored 6-Wheelers. It is designed to provide 4-wheel drive when it is necessary and to be quickly removable when it is not. It is estimated that this is only about 10% of the running time of a truck operated on ordinary highway hauling. It makes snow chains unnecessary in winter driving.

THE TRUCKTOR CORPORATION
156 Wilson Avenue, Newark 5, N. J.

Safety IS NO ACCIDENT

Trucktor AXLES

★ *ALSO MANUFACTURERS OF TRUCKTOR SINGLE AND TANDEM TRAILER AXLES* ★

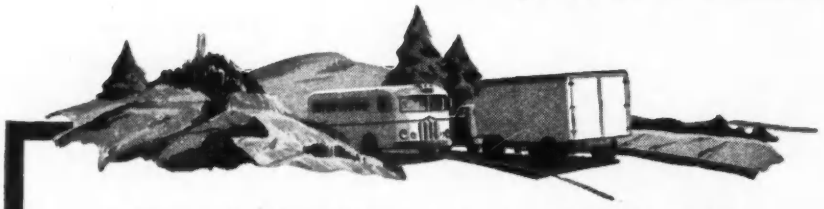
ECLIPSE-PIONEER

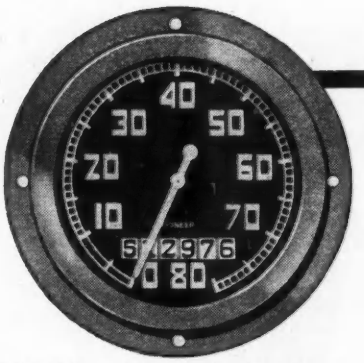
Brings Bus and Truck Operators NEW LONG RANGE ECONOMY

in *aviation quality*

SPEEDOMETERS and TACHOMETERS

with optional ODOMETER





Over 400,000 Miles of Service-Free Operation

What a performance record! Almost half a million miles of accurate speedometer operation without service or maintenance. That's the record written by the new Eclipse-Pioneer Electric Speedometer for one of America's largest bus operators. It adds up to extra profitable miles of operation—fewer costly shop hours.

The New Eclipse-Pioneer Odometer

The Eclipse-Pioneer Odometer records R.P.M.s when used with the Tachometer and acts as a precision mile totalizer with the Speedometer. It is completely enclosed in the indicator, and does not require any additional connections. The Odometer is simple in construction, highly accurate, and free of any inherent characteristics which might cause maintenance costs over long periods of service life.



Over 30 Years of Aircraft Experience

Eclipse-Pioneer Electric Tachometers are built to exacting aviation standards of accuracy and performance. That's why they can be counted on for precise, trouble-free operation day after day, mile after mile.

Efficient bus or truck operation, day in and day out, is largely dependent on engine operating conditions. One of the surest safeguards to maintaining top engine performance, is to eliminate overspeed conditions. Eclipse-Pioneer Aviation Quality electric instruments give engine or vehicle speed to your operator with absolute accuracy, for his most efficient use of the engine. And, with Eclipse-Pioneer's precision Odometer, you have a complete history of engine or vehicle service as a sure guide on periodic overhauls. For better bus efficiency, for longer truck operation, check these new aids to top performance.

ECLIPSE-PIONEER

TETERBORO, NEW JERSEY

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Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

often imitated—never duplicated



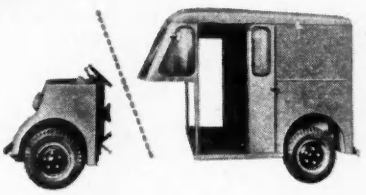
● Other trucks may look like DELIVR-ALL. But any resemblance is strictly superficial . . . DELIVR-ALL has *never* been duplicated.

DELIVR-ALL is still the one and only delivery truck with a low, wide, flat floor—straight through from front to back . . . because only DELIVR-ALL is built around a wholly self-contained front-wheel-drive power unit—completely eliminating conventional frame, drive shaft and rear axle.

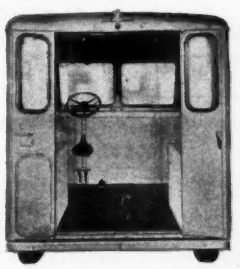
In ratio of cubic capacity to wheelbase, DELIVR-ALL is way out in front. Capacities range from 184 cu. ft. for the 90-inch wheelbase model to 349 cu. ft. for the 118-inch wheelbase model . . . real big-truck capacities—short, short wheelbases.

And DELIVR-ALL offers such additional big features as standing or seated driving—two flexible speed ranges—dependable, economical 4-cylinder engine—wide, easy-opening doors—modern streamlined styling—and many others.

Yes, DELIVR-ALL is truly the low-cost answer to high-speed deliveries. Let your near-by Marmon-Herrington dealer demonstrate—*with your own loads, on your own routes.* Or write for literature.



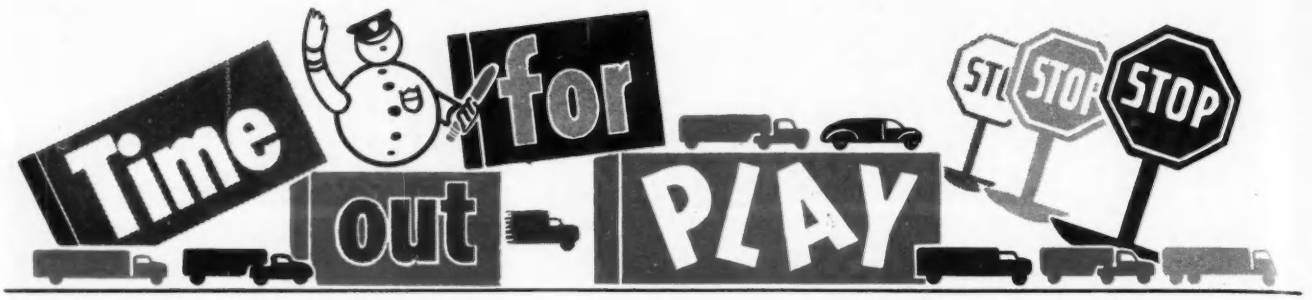
Only one extra front-wheel-drive power unit is needed to keep a whole fleet of DELIVR-ALL trucks in continuous operation.



High, wide, spacious interior permits bigger loads—faster, easier loading and unloading—longer, more profitable routes.

MARMON-HERRINGTON COMPANY, INC. • INDIANAPOLIS 7, IND.

MARMON-HERRINGTON COMPANY, INC.
MARMON-HERRINGTON
DELIVR-ALL
INDIANAPOLIS, INDIANA U.S.A.



CCJ QUIZ

By G. W. Bahl

Truck drivers may well wonder what "Sunday drivers" have on their minds—if anything. We have often wondered what a truck driver has on his mind as he encounters the many different things en route to his destination. A typical trip might prompt the following questions and the average driver should easily get seven right out of ten. Answers on page 136.

1.

Drivers riding through the country pass many a herd of cows without realizing they are responsible for an item used on their vehicle. Surplus milk is used for

( ) paint ( ) filter elements
( ) safety glass ( ) tires

2.

Further down the same turnpike the driver may run across a series of white stripes painted across the road. These indicate

( ) state inspection area ( ) reduce speed—bad road ahead
( ) roadside weighing station ( ) state testing section

3.

This same driver may not be aware that one-third of the nation's surfaced highways are now center-striped. This represents

( ) 100,000 miles ( ) 200,000 miles
( ) 150,000 " ( ) 250,000 "

4.

The cost of striping and re-striping these highways each year is estimated at

( ) $1,800,000 ( ) $3,800,000
( ) 2,800,000 ( ) 4,800,000

5.

Jolting along a rough section of road, the driver may casually wonder what it would cost to build our highways to meet the transportation needs of today. Estimated cost is

( ) $40 billion ( ) $60 billion
( ) 50 " ( ) 70 "

6.

Passing another farm, it is safe to assume the driver does not realize that 68 per cent of the total tonnage of cattle, hogs and sheep arriving at market terminals last year were delivered by truck. This amounted to nearly

( ) 4,000,000 tons ( ) 8,000,000 tons
( ) 6,000,000 " ( ) 10,000,000 "

7.

The total number of live animals transported from farms to market in 1948 was over

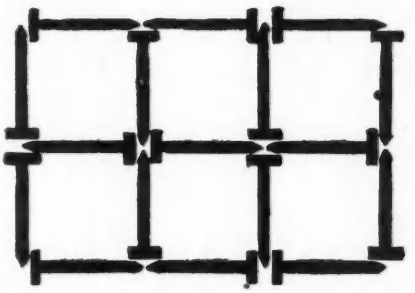
( ) 48,000,000 ( ) 68,000,000
( ) 58,000,000 ( ) 78,000,000

BRAIN TEASERS

By Boris Randolph

Remove Six Nails.

The following six squares are formed with seventeen nails. How would you go about removing six nails so as to leave two squares?



Diesel Engine Hourglass

Beginning with the word DIESEL or ENGINE, drop one letter for each line above or below, and rearrange the remaining letters to form a new word each time until the letter E in the middle is reached. Or you can begin with the letter E and *add* a letter each time until the words DIESEL and ENGINE are reached. In either case the definitions will guide you.

D I E S E L

A fall of earth — — — — —
Earth surrounded by water — — — —
To be prostrate — — —
An overhead train — —

E

A type measure — —
Referring to a maiden name — — —
A man's name — — — —
A supernatural creature — — — — —

E N G I N E

Answers on Page 136

8.

To deliver this amount of livestock, the trucks used carried

( ) 2,220,000 loads ( ) 4,220,000 loads
( ) 3,220,000 " ( ) 5,220,000 "

9.

Placed bumper to bumper, this number of trucks would reach ( ) around the globe at the equator.

A. ¼ of the distance C. ⅞ of the distance
B. ½ ditto D. ½ ditto

10.

The miles traveled in hauling this amazing tonnage would equal

( ) 5,000 trips around the equator ( ) 15,000 trips around the equator
( ) 10,000 ditto ( ) 20,000 ditto



IT'S AMAZING how Pedrick piston rings help make *all* engine jobs come out right! "Heat-Shaping" does it. It takes *heat* to remove the stresses and strains set up in every ring by factory machining operations. It takes *heat* to make rings that will remain permanently correct in shape and tension!

Because Pedrick piston rings *are* "Heat-Shaped," they fit better. They remain efficient for extra thousands of miles. In addition, they show greater resistance to sticking or warping in service.

No other ring gives you the advantages of "Heat-Shaping" in overhauling light, medium, or heavy-duty engines. WILKENING MANUFACTURING COMPANY, Philadelphia 42, Pa. *In Canada:* Wilkening Manufacturing Company (Canada) Ltd., Toronto.

FOR 29 YEARS, SUPPLIER OF PISTON RINGS TO LEADING VEHICLE AND ENGINE MANUFACTURERS

ONLY Pedrick PISTON RINGS ARE "HEAT-SHAPED"

NEW MULTI-PURPOSE GEAR LUBRICANT GIVES TOP

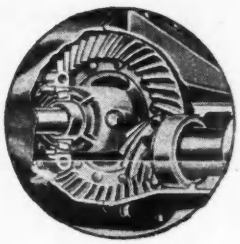




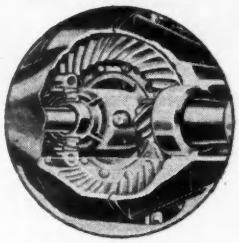
PROTECTION UNDER HIGH SPEEDS, HEAVY LOADS!

Mobilube GX

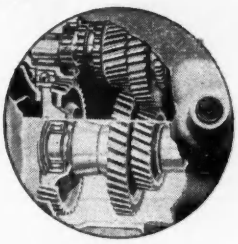
Great New Gear Oil for All Axle and Manually Shifted Transmission Gears!



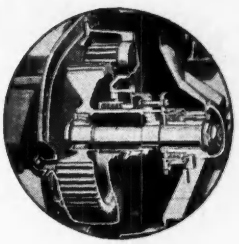
HYPOID



SPIRAL BEVEL



HELICAL



SPUR

- **Reduces Inventory**
  Only one gear lubricant to stock!
- **Simplifies Application**
  Only one gear lubricant to handle!
- **Eliminates Error**
  Only one lubricant for all gears!

HERE'S *correct lubrication* for all gears—one big multi-purpose gear lubricant with 8 big features!

New Mobilube GX protects fully . . . is non-deposit forming, non-corrosive even if water gets in housing . . . resists foaming . . . will not channel or separate in service or storage . . . gives extra rust protection, extra long service . . . makes gear shifting easy!

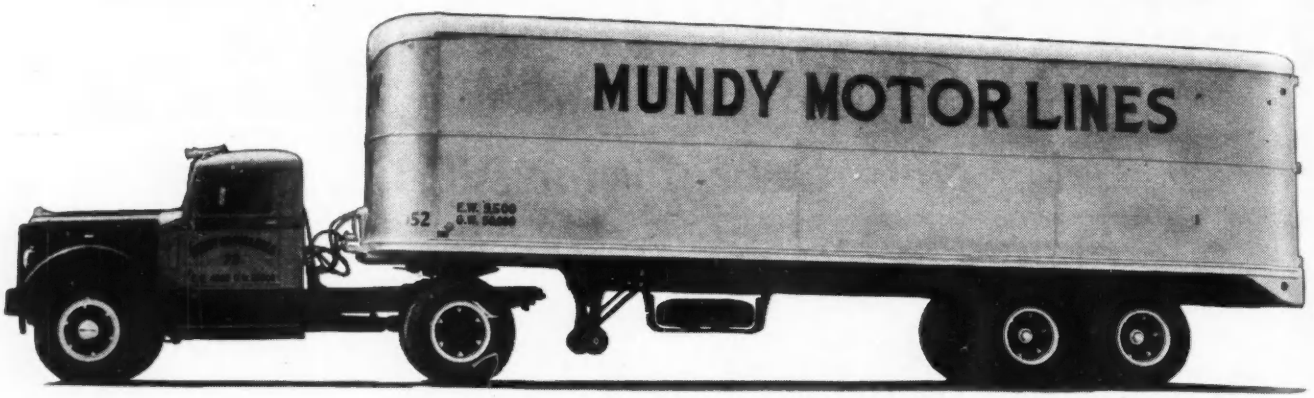
Made in 3 grades—S.A.E. 80, S.A.E. 90, S.A.E. 140—*new* Mobilube GX helps you cut costly equipment time out—keep machines on the job, paying off!

From now on, specify *new* Mobilube GX!

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.



Haul all the law allows



This Model C-70-TS Autocar Tractor, coupled to a 32-foot semitrailer, is owned by Mundy Motor Lines, long-distance haulers of Roanoke, Va.

by AUTOCAR

The rigid weight law of the state of Virginia prescribes 50,000 lbs. as the maximum gross train weight—with 18,000 lbs. on any one axle. Here's how this Autocar-designed unit distributes it: steering axle, 6,380; driving axle, 17,705; trailer bogie, 25,915. Total, 50,000.

The wide range of the Autocar line virtually enables haulers to make their own specifications. In addition, those who order Autocars get the Autocar standard of heavy-duty engineering. This means lowest-cost transportation of big pay-loads at normal traffic speed.

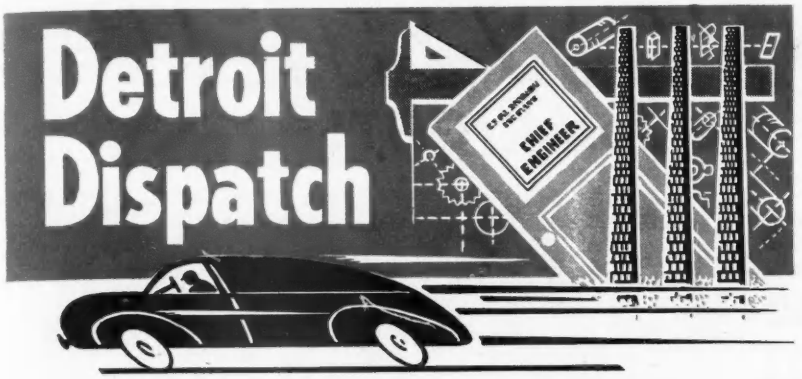


AUTOCAR TRUCKS • They cost less, because they do more work

THE AUTOCAR COMPANY, ARDMORE, PA. • ESTABLISHED 1897

Factory Branches and Distributors from Coast to Coast

Detroit Dispatch



by LEONARD WESTRATE
CCJ Detroit News Editor

Ford Cast Spoke Wheels . . . Tinted Windshields . . . Chevrolet Torque Converter . . . ICC Brake Specifications Turned Down . . . Hudson Truck Plans Shelved . . . GVW Ratings Too Low

Cast Spoke Wheel for Ford

Ford is considering adoption of cast spoke wheels on its large trucks as optional equipment. Operators have been asking that such wheels be made available so that they can use one spare for both truck and trailer. Currently the Ford hub has 8 studs, whereas some trailers have 10, making a change of wheel impossible. The cast spoke wheels with demountable rim would permit using one spare that would fit any wheel of the combination.

Tinted Windshields on Way

As a result of provisions being suggested in the safety glass code followed by the motor vehicle administrators, tinted glass windshields in trucks to reduce glare and heat from the sun may be a possibility before too long. Two General Motors divisions already have such equipment ready for passenger cars on an optional basis, but are holding up offering them to the public until restrictions have been lifted to make them legal in all states. The glass also might be used in rear windows in trucks to cut down heat from the sun. Windshields constructed of tinted glass have a transluscent area in the upper part which fades out at eye level.

Watch for New Chevrolet Shift

One large truck manufacturer is planning to offer a torque converter with automatic drive on door-to-door delivery trucks in a few months. Nearest thing to such a device now in use is the fluid drive offered on the Dodge Route Van. Another company has built two experimental jobs with the GM Hydra-Matic transmission, but buyers have shown no great interest in ordering the units because of the added cost. Another possibility to watch is use of torque converter by Chevrolet on some of its smaller truck models. The division has a new transmission in early stages of production for its passenger car, and it is highly probable that it might be offered on door-to-door deliveries later. The transmission is to be announced on the 1950 model passenger cars about the first of the year.

Disagree on Brake Specifications

Truck manufacturers have turned down a proposal by ICC that a brake certification rating be established for trucks certifying that the unit has brakes adequate for 125 per cent of the gvw of the vehicle. Truck buliders turned down the proposal on the grounds that no arbitrary percentage of gvw would be suitable because of variations in equipment, usage, and the brakes sold with the truck for a particular type of operation. In other words a specified percentage would be safe for one vehicle in a definite operation and penalize another operating under different conditions. They take the position that the only practical method apparent at the moment is an actual check of the truck. ICC points out that a gvw certification of the brakes would eliminate traffic interference while making brake checks on busy highways, since it could be done in state weighing stations by the same personnel now used to check the weight of the vehicle.

Makers' GVW Ratings Low

Many operators currently feel that gvw ratings imposed by the manufacturers are too low. Actually some states are allowing operators to license their trucks in excess of the stated gvw rating and charging them extra for the privilege. We understand that the manufacturers are not conceding any changes at present but that the question probably will come up in discussions before too long among the truck builders.

Studebaker Raises H P

Studebaker has stepped up the horsepower of its 245 cu in. truck engine from 100 hp to 102 hp. The torque also is increased 6 lb to 205 ft lb. The increased performance is largely due to stepping up the compression ratio to 7 to 1 .

Goodrich Ups Tire Life

A new technique in building nylon cord tires may result in greater mileage and safety for truck tires. B. F. Goodrich Co. has developed a method for building the tires without requiring restricting cross threads to space the cords. The company says that the new methods permit the cords to flex under normal stress and road shocks and that all cords carry their full share of the load with no impeding action from the conventional cross threads that have been used universally in the industry.

Hudson Truck Plans Shelved

So far as can be determined Hudson has no immediate plans to resume production on its pickup truck. The company has a model ready with a cab and front end appearance of the Hudson passenger car, but is reported to be hesitating to build it because of the possible objections by Hudson owners who might not like the idea of a truck resembling their automobiles.

GMC Eyes Service Angle

GMC should have relatively little trouble with service kinks in its new heavy duty line. While the trucks were being designed, the service staff sat in with the engineers and were able to head off many potential sources of ser-

(TURN TO PAGE 132, PLEASE)

RAMCO RE-POWERING

MEANS doing the Job RIGHT!

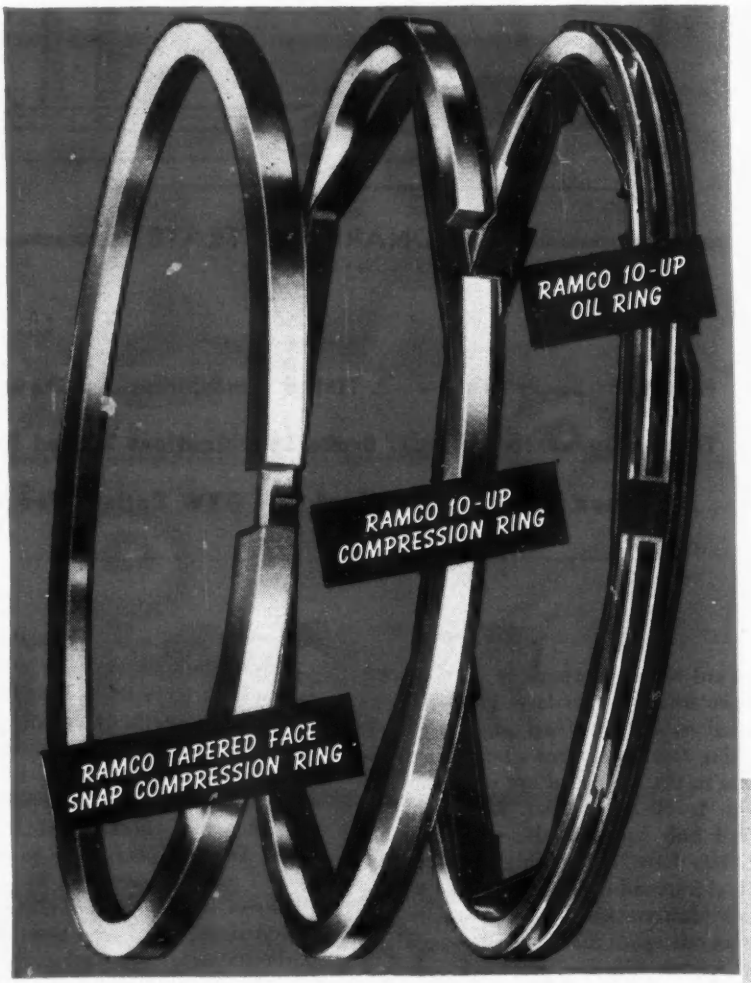
. . . it means a proven method for Re-Ring and Re-Bore jobs

. . . with Ramco 10-Up Piston Rings. This combination of rings depends on piston stabilization rather than harsh pressure to stop oil pumping and control blow-by. 10-Up's "do the job right" by preventing needless cylinder wear and loss of horsepower, making your Ramco RE-POWERING Job last longer, serve better, and give greater satisfaction.

Call for

RAMCO 10-Up PISTON RINGS

Ideal for all Fleet and Truck RE-POWERING JOBS . . . RE-RING OR RE-BORE!



RAMCO 10-Up Ring Combinations

Designed to Control Oil and Blow-by without excessive wall pressures.



This 10-Up Combination incorporates all the refinements which RAMCO engineers have made with the spring type ring in more than 25 years of pioneering this universally imitated principle. Combination consists of:

A RAMCO TAPERED FACE SNAP COMPRESSION RING

B RAMCO 10-UP COMPRESSION RING

C RAMCO 10-UP OIL RING

Note there are more wall bearing surfaces in this RAMCO 3-ring combination than in most other 4-ring combinations.



RAMCO Piston Skirt Stabilizers

Permanently RETARD piston slap by exerting pressure only where collapse occurs, at right angles to wrist pin. Require no recessing or machining, easy to install, available for alloy and steel pistons.



Double Life Principle

DURING BREAK-IN PERIOD, inner ring exerts no pressure on steel segments.

AFTER BREAK-IN PERIOD, 4 bearing surfaces for Double Life and greater oil control.

RAMCO RE-POWERING *means these, too:*



- Spiro-Seal Steel Ring that "bridges the gap"
- Elimination of "Rocking Chair Action"
- Alternating Pressure Action
- Piston Stabilization



Even RAMCO Packaging "does the job right!"

Easy Visibility • Quick Identification • Proper Packing • RAMCO Engineered Sets, packed individually or in sets, come in exclusive "error-proof" packages.

RESTORES COMPRESSION and CONTROLS OIL

says Large Fleet Maintenance Superintendent

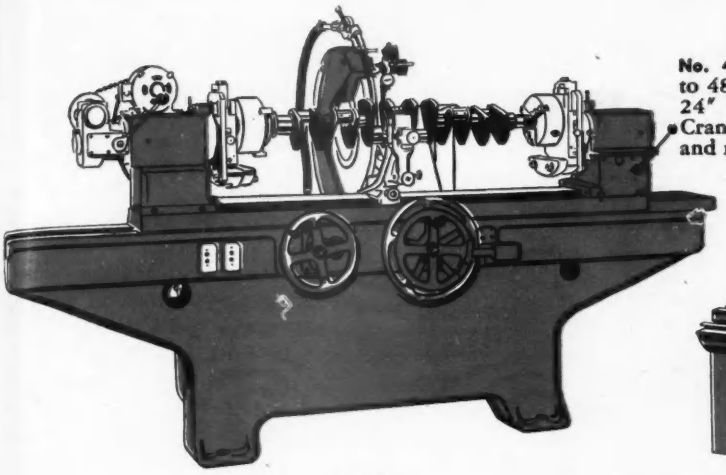
Typical of the experience reported by Fleet Operators is this letter from Earl P. Werner, Maintenance Superintendent, Kroger Company who writes: "Generally, it seems that main fleet, garage, or maintenance men are more concerned about oil consumption in re-ring installations. In our case here, I can frankly say that the experience we have had with Ramco 10-Up, re-compression has proven exceedingly satisfactory, too."

R 2714 FO Copyright 1948 Ramsey Corporation

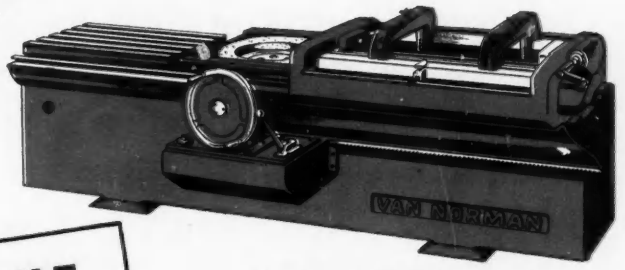
RAMCO 10 up Piston Rings

Products of Ramsey Corporation, 3710 Forest Park Blvd., St. Louis, Mo.

Ramco Piston Skirt Stabilizers . . . Seal-Tite Piston Rings . . . Oil-Tyte Piston Rings . . . Spirolox Retaining Rings, Spiro-Seal Grease Seals & Dust Seals . . . Famous RAMCOnizer Machine for reshaping collapsed piston skirts . . . Ramco 3-Up Parts Cleaner. Factories: St. Louis and Sullivan, Mo.; Fruitport, Mich.; Toronto, Ont., Canada.



No. 448 Crankshaft Regrinder up to 48″ long, has 18″ swing and 24″ wheel. One of four models. Crankshafts are ground straight and round.



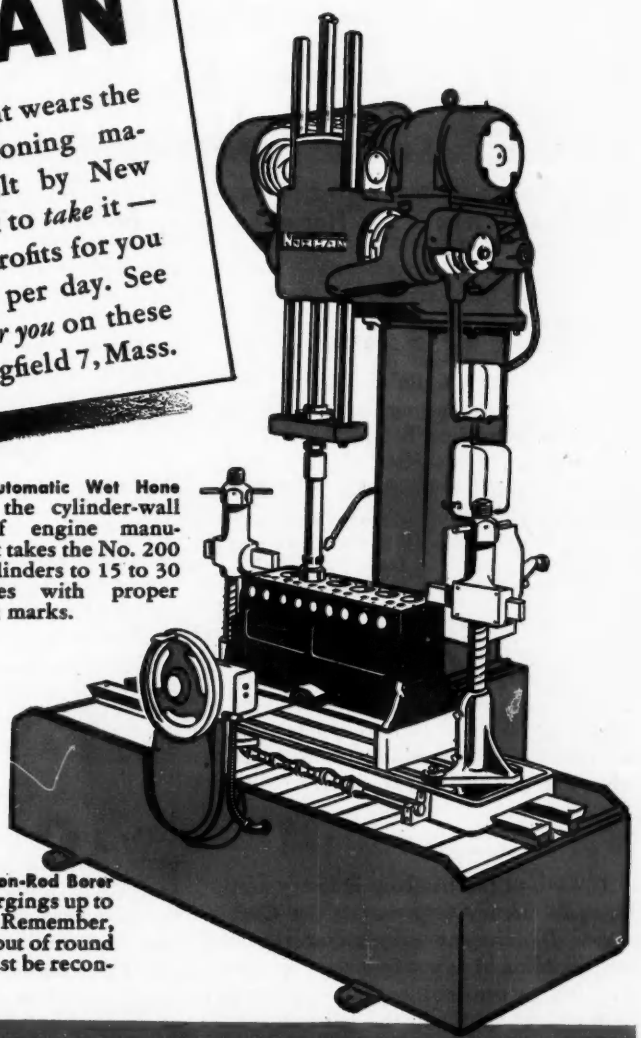
No. 565 Automatic Wet Head Grinder *grinds 75% faster.* Handles work 42″ long by 14″ wide. Cylinder heads and block tops are precision-ground.

THE PROFIT-MINE IS THE

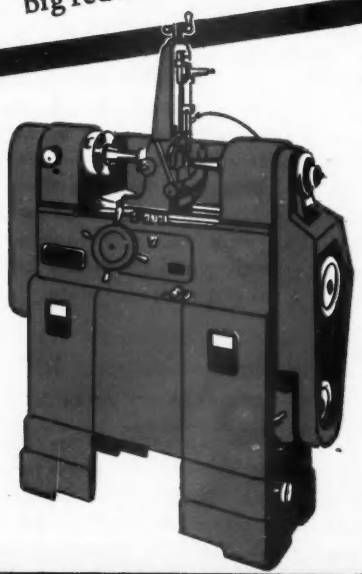
Big Red Line...

VAN NORMAN

This heavy-duty motor-rebuilding equipment wears the foremost name in automotive reconditioning machinery. Every machine is precision-built by New England machine-tool craftsmen . . . "built to *take* it — and built to *make* it" . . . built to make top profits for you by turning out finer work *and more of it* per day. See your jobber, or have him do your work *for you* on these big red machines. Van Norman Co., Springfield 7, Mass.



No. 200 Automatic Wet Hone duplicates the cylinder-wall finishes of engine manufacturers. It takes the No. 200 to finish cylinders to 15 to 30 micro-inches with proper cross-hatch marks.



No. 222 Super Con-Rod Borer & Grinder for forgings up to 3⅛″ diam. Remember, when rods are out of round .0015″ they must be reconditioned.

The Best-Equipped Shop Gets the Business! — that's why *"It Pays to Van Normanize"*



by GENE HARDY

CCJ Washington Correspondent

Michigan brake tests to use random vehicles . . . Warehouse boom bumped by truck increase . . . Railroads warned new rates may shift tonnage to trucks . . . Harwood ruling favors packed farm products

BPR Ready for Michigan Tests

The Bureau of Public Roads will move its brake-testing program into Michigan sometime before the end of this month. This portion of the overall program, being conducted with the assistance of the Advisory Committee on Motor Vehicle Brake Research, involves testing of vehicles selected at random from the general flow of traffic.

The eastern tests, held in Maryland, were completed last fall; those on the West Coast were scheduled for completion around September 1. Another phase of the study, controlled tests in cooperation with midwest operators, also will get under way shortly.

Why Warehouse Boom Lags

Growth of the trucking industry over the past decade is given by the Commerce Department as a major reason why building of new warehouses has not kept up to construction rates in other commercial fields. In the postwar construction boom, erection of new warehouses has lagged as much as 15 per cent behind other building.

Postwar inventory shortages, of course, tended to ease pressure for warehouse expansion. But an even greater reason is the increase in truck registrations, and the rising ton-miles of truck-hauled freight. Much of the intermediate haul motor freighting is from point of source to the door of the consumer.

Government construction figures show that, for the first half of 1949, the number of new filling stations being built still was on the increase, about 1800 being put in place. . . . Commercial garages, however, appeared on the downtrend at the rate of about 260 a month being started against about 400 last year.

Radioactive Rings Trace Wear

The Atomic Energy Commission reports considerable progress in the study of friction through the use of radioactive piston rings. The AEC points out that "with radioactive piston rings it is possible to trace engine wear with great accuracy and in a short time while the engine is running continuously."

In practice, the radioactive particles drop into the lubricating oil as they wear off the rings. In turn, radioactivity measurements on the oil indicate the amount of wear that has taken place.

ICC Warns Railroads on Rates

In granting another freight rate increase, the Interstate Commerce Commission warned the railroads that they might be adding to the tonnage they were already losing to trucks and other carriers. The ICC said the new increases result in a freight rate structure 57 per cent higher than in effect on June 30, 1946, and boosted the annual freight bill some $3 billion in all.

The new order permitted the railroads to add a flat 4 per cent rate advance to the interim increase of last January, except for a number of specified commodities where a flat maximum was set. These maximums included coal, coke, and iron ore—35¢ a ton; lignite—18¢ a ton; sugar and lumber—6¢ per cwt; and fresh fruits, vegetables and melons—9¢ a cwt.

Favors Packaged Products

If approved by the Interstate Commerce Commission, a ruling by Examiner C. Evans Brooks in the Harwood case would go a long way in clearing up the controversial exemption phrase concerning "agricultural products (not including manufactured products thereof)." Specifically, he held that vegetables washed and wrapped in cellophane were not manufactured products and may be hauled free of regulation except for safety, thus reversing a Division 5 opinion.

"It is plain," he said, "that Congress intended to include (within exemption) not only those commodities which are marketable in their natural state but those on which labor or mechanical skill was applied without materially affecting the natural state."

In his report, the examiner included a listing of 16 general classifications of commodities which he held should be exempt within the intent of Congress. These went much farther than present interpretations, and range from cut flowers and nursery stock, to frozen poultry and fruits and berries in natural but packaged state.

Million May Miss Wage Rise

Administration forces rammed through the House a bill which raised minimum wages from 40¢ an hour to 75¢, but in so doing lost coverage for an estimated 1.3 million workers previously included. House leaders believed the Senate would restore most of the coverage.

As passed by the House, no change was made in the present overtime ex-

(TURN TO PAGE 155, PLEASE)



● Eight of the 15 buses operated by C. B. McCleary Coach Lines, Evansville, Indiana. Extensive charter service and local schedules keep this bus fleet hard at work.

● C. B. McCleary, fleet owner (center), discusses lubrication practices with Standard Oil's O. H. Collier and B. King (at the right). Gilbert McCleary and Agnes Funk, secretary, look on.

Puts charter fleet on the road to greater savings

Stanolube HD Motor Oil

CHARTER service takes the bus fleet of C. B. McCleary Coach Lines from Evansville, Indiana, to points throughout the nation and into Canada and Mexico. Because all trips are scheduled with hotel reservations and eating arrangements made well in advance, it is important that road failures be kept at a minimum. For that reason, officials became concerned when engines required more and more upkeep because of excessive deposits and stuck rings.

The problem was put to a Standard Oil Automotive Engineer. The results obtained through the engineer's service and recommendations are reported by C. B. McCleary, owner: "Since using your Stanolube HD Motor Oil, our engine failures and maintenance costs have been substantially reduced. Engine parts are now clean and rings are free from carbon deposits. Your engineering service has been of much benefit to us."

Whether you have a particular lubrication problem or are simply looking for better fleet economy, you can benefit through this Standard Oil combination of expert engineering service and highest-quality Stanolube HD Motor Oil.

Write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois

TANDARD OIL COMPANY (INDIANA)

STANDARD

More Rubber! More Strength! *means* More Original Miles! More Recap Miles!

The GENERAL SUPER HIGHWAY

MILES MORE RAYON CORD

More and stronger cords for longer life and more recaps.



REINFORCED SHOULDERS

Air-cooled shoulder vents prevent heat concentration, increases flexibility.

EXTRA SAFE, THICK TREAD

Far more rubber for many thousands of extra, safe, economical miles.

IMPACT CUSHIONED SHOULDERS

Load vents and deflection grooves absorb road shocks—prevent shoulder separation.

HEAVY SHOCK ABSORBER PLIES

Guard against carcass bruises. Cushion impact force of sudden shocks.

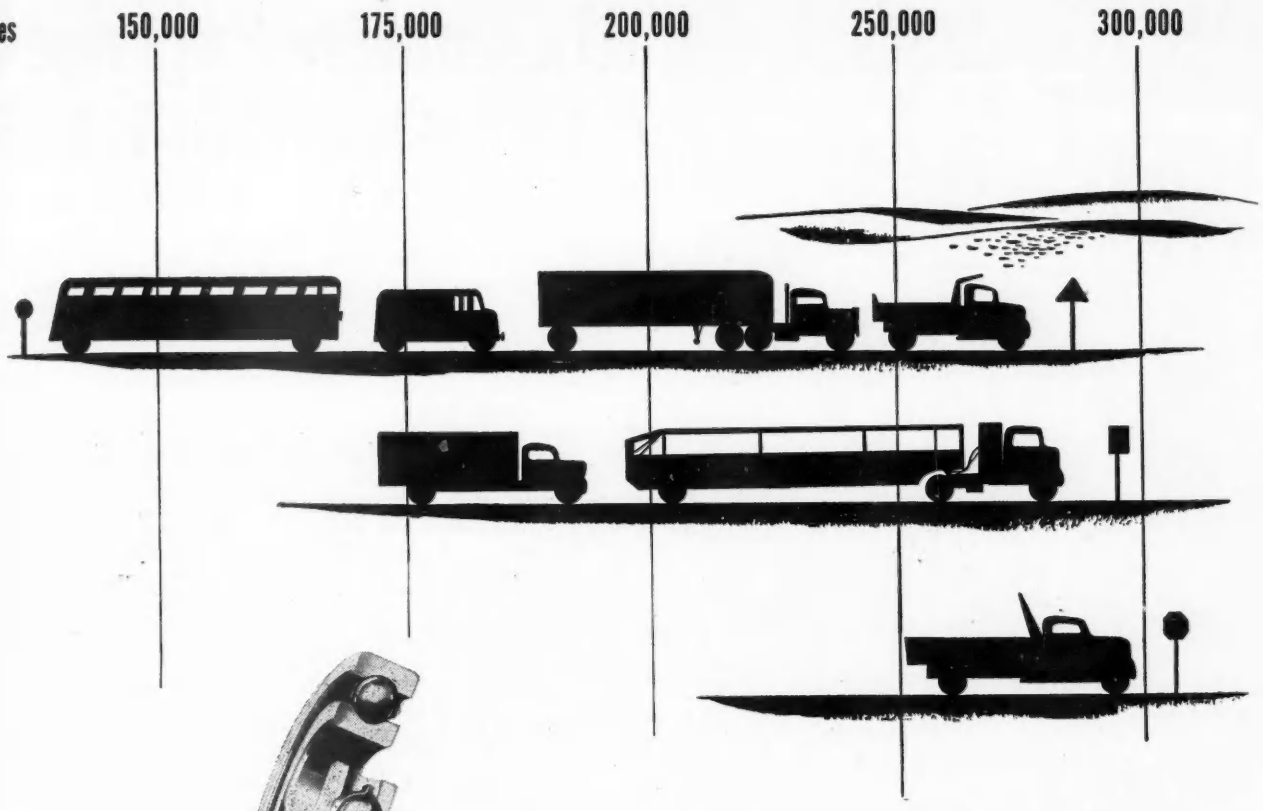
TOUGH . . . BRUISE-RESISTANT SIDEWALLS

More rubber, more strength protects against curb-bruising and chafing.

LONG MILEAGE RIDING RIBS

Thicker, free-rolling ribs for easy riding, easy steering, extra miles.

THE GENERAL TIRE & RUBBER COMPANY • AKRON, OHIO



SKF Deep groove ball bearings . . .

more, more, more, more, more, more, more, maintenance-free miles

Fleet owners with heavy schedules to meet . . . and a low overhead to maintain . . . are replacing interchangeable bearings on the transmissions of rolling stock with SKF Deep Groove Ball Bearings.

That's because they know that for lower mileage costs and less "in-the-shop" time, rugged SKF Deep Groove Ball Bearings are the answer. These SKF units are manufactured to high automotive standards and offer long bearing life . . . a must in keeping operating costs down.

Even at high speeds and heavy loads, close contact between balls and the deep continuous groove in each ring, enables SKF Deep Groove Ball Bearings to sustain radial load as well as a substantial thrust load in either direction! Check your SKF Distributor, he has a stock of these bearings to meet your requirements. SKF Industries, Inc., Philadelphia 32, Pa. 6598



Automotive Bearings engineered by



MIDLAND'S *Complete Packaged* AIR BRAKE KITS

With 7.3 Cu. Ft. Compressors

Available for all popular makes and models. Field installations—everything furnished to make a complete installation. Instructions and installation diagram in each kit.



AIR BRAKE KIT

For Tractor Installation order:

- *STRAIGHT TRUCK KIT*
- *TRACTOR TO TRAILER OUTLET KIT*
- *AIR HAND CONTROL VALVE KIT*
- *AIR HORN KIT (SINGLE OR DUAL)*

Also Available: AIR CONVERSION VALVE KIT.
10 CU. FT. COMPRESSOR.



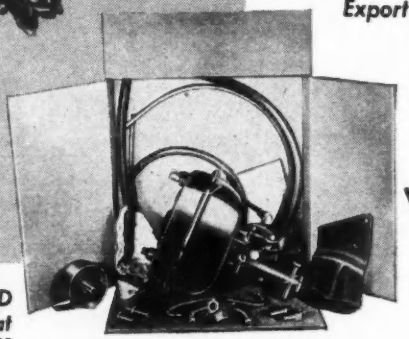
TRAILER AIR BRAKE KIT

VACUUM BRAKE KITS . . .

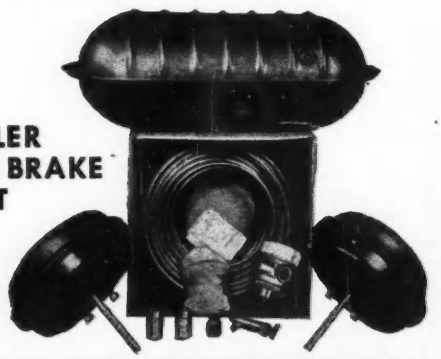
For all makes and models from ½ ton up. Contain Midland's HY-POWER units. Furnished in sizes to suit the vehicle.

- *STRAIGHT TRUCK KIT*
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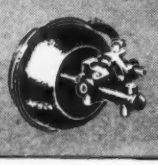
HY-POWER VACUUM BRAKE KIT



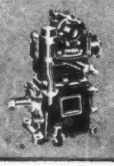
TRAILER VACUUM BRAKE KIT

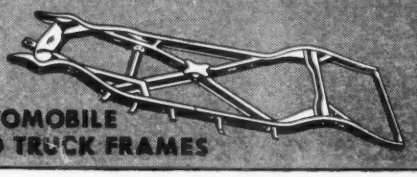
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POWER BRAKES





AUTOMOBILE AND TRUCK FRAMES



BUS DOOR CONTROLS



CCJ HAS NEW ASS'T EDITOR

Michael J. Germak has joined the CCJ editorial staff as assistant editor. He comes to the Chilton Co. with some 10 years of newspaper and technical writing experience. After working with daily newspapers for several years, Germak spent two years writing service bulletins for the Mack Manufacturing Corp. at New Brunswick, N. J., and then following the war he served as plant editor for the Lincoln-Mercury plant of the Ford Motor Co. at Metuchen, N. J.

JUNE FREIGHT TRANSPORT UP

The volume of freight transported by motor carriers in June increased 6.6 per cent over May and 0.5 per cent over June 1948, according to statistics released by the department of research, American Trucking Associations, Inc. Reports from 317 carriers in 43 states showed an aggregate of 3,013,691 tons transported in June compared with 2,826,934 tons in May and 2,997,286 tons in June, 1948.

GAS OCTANE RATING BETTER

For the third consecutive year, gasoline octane ratings have shown improvement, the Bureau of Mines reports. Regular priced gasoline had an average octane rating last winter of 75.6 compared with 75.3 for the previous year, while the rating of premium gasoline averaged 79.7 as against 79.4 the year before.

JUNE RUBBER USE UP

Rubber consumption in June was estimated at 84,685 long tons or an increase of 4.17 per cent over May, according to the Rubber Manufacturers Association. Over 19,000 long tons of reclaimed rubber were used.

ICC CHANGES REPORT FORMS

Three new ICC forms covering the period of Sept. 1 to Oct. 15 are to be used for contract and common carrier monthly reports of drivers' excess on duty time and excess driving time as well as reporting no excess driving or on-duty time. These forms, BMC-60, 61 and 62 replace forms BMC-55, 56, 57 and 58.

LEGISLATIVE NOTES

A bill which has passed both houses in the **Georgia** Legislature will increase gasoline tax one cent.

In **Ohio**, a new law provides for a 19,000 lb axle load limit, allows 24,000 lb on tandem axles spaced four feet or less apart, 31,500 lb when more than four but less than eight feet apart, and provides that the bridge formula for figuring gross weight shall be based on the extreme wheelbase of the vehicle.

Maximum height for vehicles traveling fixed routes, except buses, has been set at 12½ ft in **Illinois.**

Motor trucks and trailers carrying 50 bales of cotton or less will be exempted from size and weight limits in **Alabama.**

Gross weight in **California** will be based on a table graduated from 35,200 lb to 76,800 lb. Previously gross weight had been determined by a formula based on wheelbase.

TRUCKERS BUY PENNSY SHARES

Leaders of the Pennsylvania motor truck industry are set on getting a voice in management and policy of the Pennsylvania Railroad Co. and so hope to patch up whatever differences exist between rail carriers and trucking interests.

Reports that many truck firm heads, among them, James P. Clark, a Philadelphian and head of one of the states leading fleets, were buying shares of rail stock were made public at a recent meeting of the new policy committee for the Pennsylvania Motor Truck Association.

Ted V. Rodgers of Scranton, former association president and chairman of the committee said:

"There is some reason why railroad management keeps hammering away at trucks. Both stockholders and the shipping public ought to know what it is."

He scored the railroads for what he called failure to come to grips with

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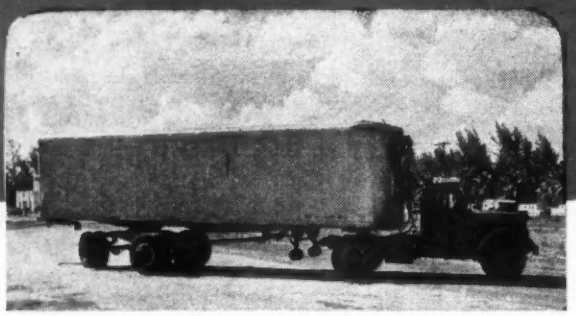
DATES AND DOINGS

SEPT. 2-3—North Carolina Motor Carriers Assn. annual meeting, Mayview Manor Hotel, Blowing Rock, N. C.
SEPT. 3-5—Minnesota Motor Transport Assn. Convention, Detroit Lakes, Minn.
SEPT. 5-7—Mississippi Transport Assn. Convention, Buena Vista Hotel, Biloxi, Miss.
SEPT. 6—Mississippi Transport Assn., Truck Roadeo, Kessler Field, Biloxi, Miss.
SEPT. 12-13—Wisconsin Motor Carriers Assn. Convention, Lake Lawn Resort, Lake Delevan, Wis.
SEPT. 12-14—National Transit Safety Conference of American Transit Association, LaSalle Hotel, Chicago.
SEPT. 12-16—Fleet Supervisors Training Course, Purdue University, Lafayette, Ind.
SEPT. 14-16—Annual Convention of the National Association of Motor Bus Operators, Drake Hotel, Chicago.
SEPT. 15-17—Virginia Highway Users Assn. Convention, Roanoke Hotel, Roanoke, Va.
SEPT. 16-17—Michigan Trucking Assn. Convention, Park Place Hotel, Traverse City, Mich.
SEPT. 16-17—Pennsylvania Motor Truck Assn. Fall Meeting, Bedford Springs Hotel, Bedford, Penna.
SEPT. 16-17—Indiana Motor Truck Assn. Convention, Claypool Hotel, Indianapolis, Ind.
SEPT. 16-18—Central Motor Freight Assn. Motor Truck Safety Roadeo and Motor Equipment Exhibition, State Fair Grounds, Springfield, Ill.
SEPT. 17—Maine Truck Owners Assn. Roadeo, Old Stadium Field, Portland, Maine.
SEPT. 19-23—Fleet Supervisors Training Course, Penn State, State College, Penna.
SEPT. 22-24—Kansas Motor Carriers Assn. Convention, Kansan Hotel, Topeka, Kansas.
SEPT. 24—Massachusetts Motor Truck Assn. Convention, New Ocean House, Swampscott, Mass.
SEPT. 24-25—Arizona Motor Transport Assn. Truck Roadeo and Convention, Hotel Westward Ho, Phoenix, Ariz.
SEPT. 26-30—Fleet Supervisors Training Course Ohio State University, Columbus, Ohio.
SEPT. 29-OCT. 1—Nat'l Truck Body Mfgrs. & Distributors Assn. Annual Convention, Edgewater Beach Hotel, Chicago, Ill.
OCT. 3-5—National Defense Transportation Assn. Annual Convention, Atlanta-Biltmore Hotel, Atlanta, Ga.
OCT. 3-6—Annual Convention of the American Transit Association, Traymore Hotel, Atlantic City, N. J.
OCT. 3-7—Fleet Supervisor Training Course, University of Kansas, Lawrence, Kansas.
OCT. 4—Motor Transport Assn. of Connecticut Annual Convention, Hotel Bond, Hartford, Conn.
OCT. 5-6—Associated Motor Carriers of Oklahoma, Inc., Annual Convention, Mayo Hotel, Tulsa, Okla.
OCT. 6-7—Tennessee Motor Transport Assn. Annual Convention, Andrew Jackson Hotel, Nashville, Tenn.
OCT. 6-7—West Virginia Motor Truck Association, Inc., Annual Convention, Prichard Hotel, Huntington, W. Va.
OCT. 10-14—Fleet Supervisors Training Course, University of Minnesota, Minneapolis, Minn.
OCT. 15-20—Baking Industry Exposition, Municipal Auditorium, Atlantic City, N. J.
OCT. 17-21—Fleet Supervisors Training Course, Penn State College, State College, Pa. (Passenger Carriers)
OCT. 21-26—American Trucking Associations, Inc., Annual Convention, Hotel Statler, Boston, Mass.
OCT. 24-28—37th Annual Safety Congress and Exposition, Commercial Vehicle Sessions, Palmer House, Chicago.
OCT. 31-NOV. 4—Fleet Supervisors Training Course, Penn State College, State College, Pa. (Maintenance Supervisors)
NOV. 2-4—American Society of Body Engineers, Inc., Annual Technical Convention, Rackham Memorial Building, 100 Farnsworth Ave., Detroit, Mich.
NOV. 3-5—Idaho Motor Transport Assn. annual Convention, Boise, Idaho.
NOV. 10-12—Montana Motor Transport Assn. annual convention, Northern Hotel, Billings, Mont.
NOV. 14-18—Georgia School of Technology, Atlanta, Ga.
NOV. 17-18—Arkansas Bus & Truck Assn. convention, Marion Hotel, Little Rock, Ark.
NOV. 28-30—Florida Trucking Assn. convention, Jacksonville, Fla.
DEC. 1-3—Oregon Motor Transport Association, Inc., annual convention, Multnomah Hotel, Portland, Oregon.
DEC. 5—Missouri Bus & Truck Association annual convention, Hotel Governor, Jefferson City, Mo.

Good for all! saves for all!

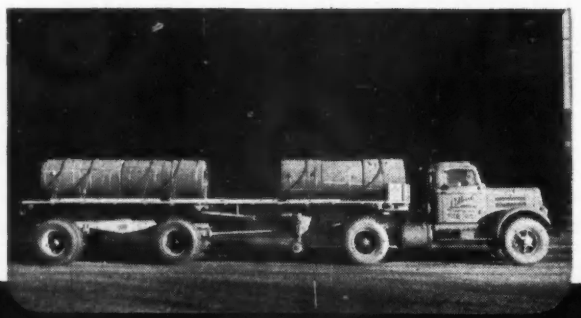


HOOBLER UNDERCARRIAGE









WHETHER you operate tankers, high-sides, vans or flat tops (28 feet and over), you can reduce operating costs and increase trucking profits with the Hoobler Undercarriage.

HERE'S WHY

The Hoobler Undercarriage allows the trailer to ease around the tightest corners or travel the straightaways, with practically no scuffing of tires.

"Outrigger" action provides greater stability on curves. Flexible, multiple support absorbs practically all road bumps. Minimum load shifting, loads ride safer.

Highly important, Hoobler axle spacing generally permits greater payloads.

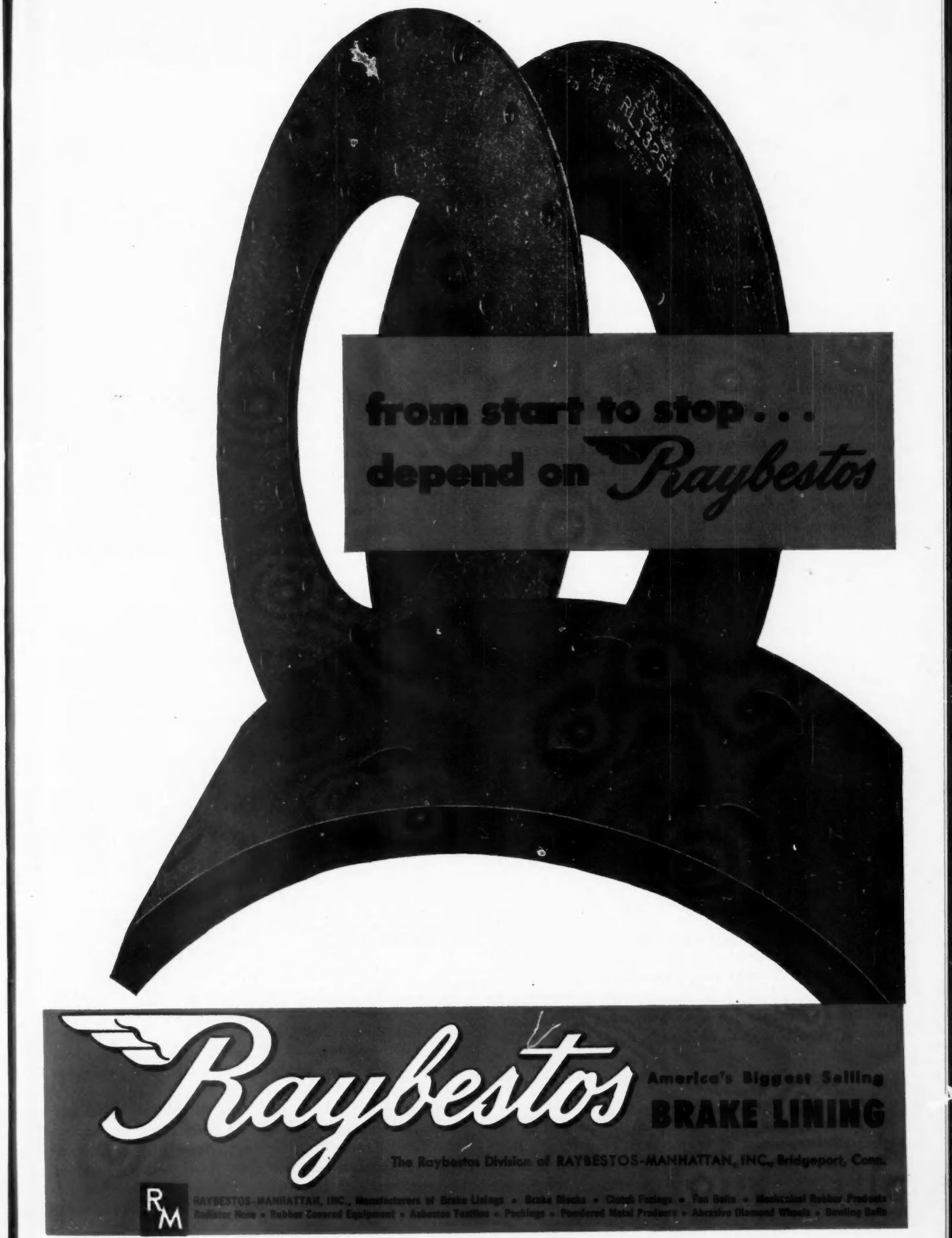
Simple in design and construction, quickly inspected, easily serviced, the Hoobler Undercarriage can help *you* make savings every mile, every day, just as it does for users across the country.

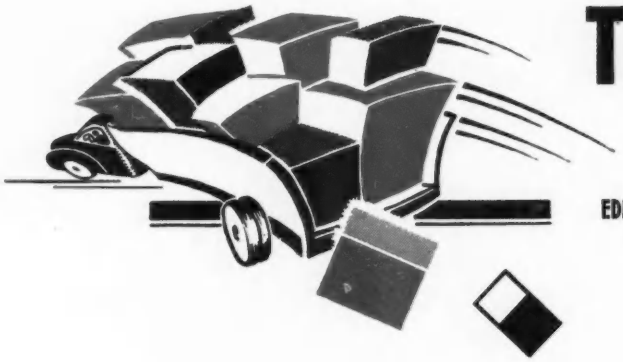
For complete information, write The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL

DESIGNERS AND PRODUCERS OF STEEL PRODUCTS SINCE 1906

Builder of The Hoobler Undercarriage


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BRAKE LINING
The Raybestos Division of RAYBESTOS-MANHATTAN, INC., Bridgeport, Conn.
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RAYBESTOS-MANHATTAN, INC., Manufacturers of Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Mechanical Rubber Products
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The OVERLOAD

EDITORIAL COMMENT by BART RAWSON - EDITOR

Why Not Go to the People with a Highway Transportation Fair?

WHILE in Chicago recently we made a special point of visiting the Railroad Fair. We felt a little guilty for we were wearing a small chip on our shoulders and frankly gunning for the first faint trace of propaganda. But the truth, the whole truth and nothing but the truth is, as those who have seen it know, that there isn't a single word of propaganda in the whole show.

We came away distinctly impressed by the fact that here was an invitation from the railroads to J Doe and Jane Dokes to "come see what we have" ar n't it nice? Here are our streamlined trains of today and tomorrow, our massive locomotives, our specialized freight cars and even a caboose for your inspection. And all this combined with top-grade showmanship that ranges from a full-scale pageant of railroad history to complete frontier towns reached by a ride on the narrow-gage Cripple Creek and Tin Cup RR. Indeed, the railroads are to be congratulated—even by highway freight interests, if you please—for a top-notch affair.

• • •

Now haven't we all been grasping in the dark for a way of reaching this same John Doe and this same Jane Dokes with the story of highway transportation? Wouldn't this very same couple, representing millions of American citizens, eat up a show that told them how logs were trundled out of the forest to make their morning newsprint, how their frozen food, their gasoline, their milk, their every need was delivered to every village and hamlet? Wouldn't they get a kick out of watching a kind of continuous National Roadeo? Wouldn't they like to see how their buses are air conditioned; even how coal and ore is brought out of the mines?

• • •

The industry has spent millions on the promotion of highway safety, which of course is a good thing. But if our memory serves us correctly, and with the notable exceptions of ATA public relations activities, and a current radio series by a trailer builder, hardly a penny on selling its billion dollar story to the public.

To do the job right—and it must be done right—would be a tremendous undertaking. There can be no denying that. It would require the full cooperation of truck manufacturers, bus manufacturers, trailer manufacturers, possibly automobile manufacturers, all of the trade associations and a great number of operating companies. It would need the showmanship of a General Motors Diorama, such as shown at the Waldorf last year, or better yet, a full scale Futurama, such as the one that drew more people than any other exhibit at the New York World's Fair.

It could use a truck assembly plant or a tire factory. It could tell the story of power and safety on the highway. It could bill a Clark Gable as a truck driver and a Jimmy Stewart as a bus driver in an original and top-calibre stage show.

By all means it should house a modern truck and bus terminal, actually carrying passengers and freight to and from the fair and open for complete inspection from the loading docks to the super efficient maintenance shop where Joe and Jane could watch the trucks and buses being made ready for a 20 or a 4000-mile run.

• • •

But for our money, it should be entirely free from propaganda. To be sure it could point out why properly distributed loads don't damage highways, provided the demonstration was convincing enough. It probably should have a cross-section of a well-built modern highway to show how it should be built—and drained—to carry passenger car as well as truck traffic. And undoubtedly the tax story should be there.

But it shouldn't say a single unkind word for other forms of transportation. It might, in fact, even include a railhead and an airport, with freight and passengers being transferred to you know what.

Fantastic? Perhaps. But it's worth thinking about and already being talked about. At the summer meeting of the Truck Trailer Manufacturers' Association in Chicago the lobbies were emptier than usual between sessions because many of the members had the same idea we did. They went down to the Railroad Fair for a look and came away in a meditative, yes, even an inspired mood.

BROCKWAY USES SHULER AXLES



THERE ARE NO BETTER AXLES, AT ANY PRICE!

SHULER AXLE COMPANY, Inc.
Louisville, Kentucky

Since 1915, Manufacturers of: One-Piece Tubular and Square Trailer Axles, Front Axles, Machinery Trailer Axles, Machinery Front Axles, Front-Steer Trailing Axles, Heavy-Duty Brakes (Mechanical, Vacuum and Air), House Trailer Axles, Miscellaneous Forgings for Heavy-Duty Trucks and Trailers.

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WEST COAST WAREHOUSE: 1280 Forty-Fifth St., Oakland



KOPPERS K-SPUN
Piston Rings

FOR OPERATING ECONOMY and POWER

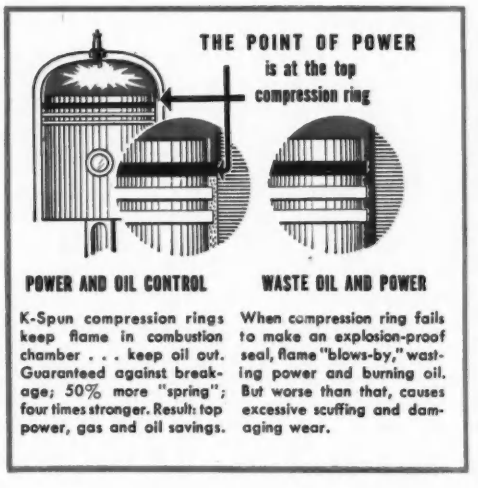
CYLINDER WEAR REDUCED by HALF
RING LIFE INCREASED 4 TO 5 TIMES

The powerful trucks on the Alcan Highway are only one of the many examples of experiences that have shown the way to real power, top operating economy, and lower maintenance costs.

Responsible for these records are Koppers K-Spun Piston Rings with Porous Chrome* Plating! These are the rings that power the Martin Mars—the B-36—the big Dieseliners; the rings that are used wherever power and economy are demanded in Diesel and gasoline engines; the rings that are now the choice of many bus and truck fleets in all types of service.

When you get all the facts about these new rings, you'll do what many other operators are doing—concentrate 100% on Koppers K-Spun Piston Rings. You'll make more profits by reducing "down-time," by lowering fuel and oil costs—and you'll make more "pay-miles" per dollar. Koppers Company, Inc., Piston Ring Dept., Box 626, Baltimore 3, Maryland.

*VAN DER HORST PROCESS



A MUST FOR THOSE WHOSE BUSINESS IS

American

KOPPERS K-SPUN

K-SPUN

The Miracle Metal For Piston Rings

With the development of K-Spun, the miracle metal for Piston Rings, Koppers engineers and metallurgists made possible a tremendous advance in piston ring efficiency.

For years, automotive engineers have known that the top compression ring in any internal combustion engine did 85% of the job. But they knew, also, that the all-important top compression ring rapidly lost most of its effectiveness because no metal had yet been developed with "guts" enough to give long service in today's high-speed, high-compression engines . . . and no oil ring has ever been designed that can take over the job of the top compression ring.

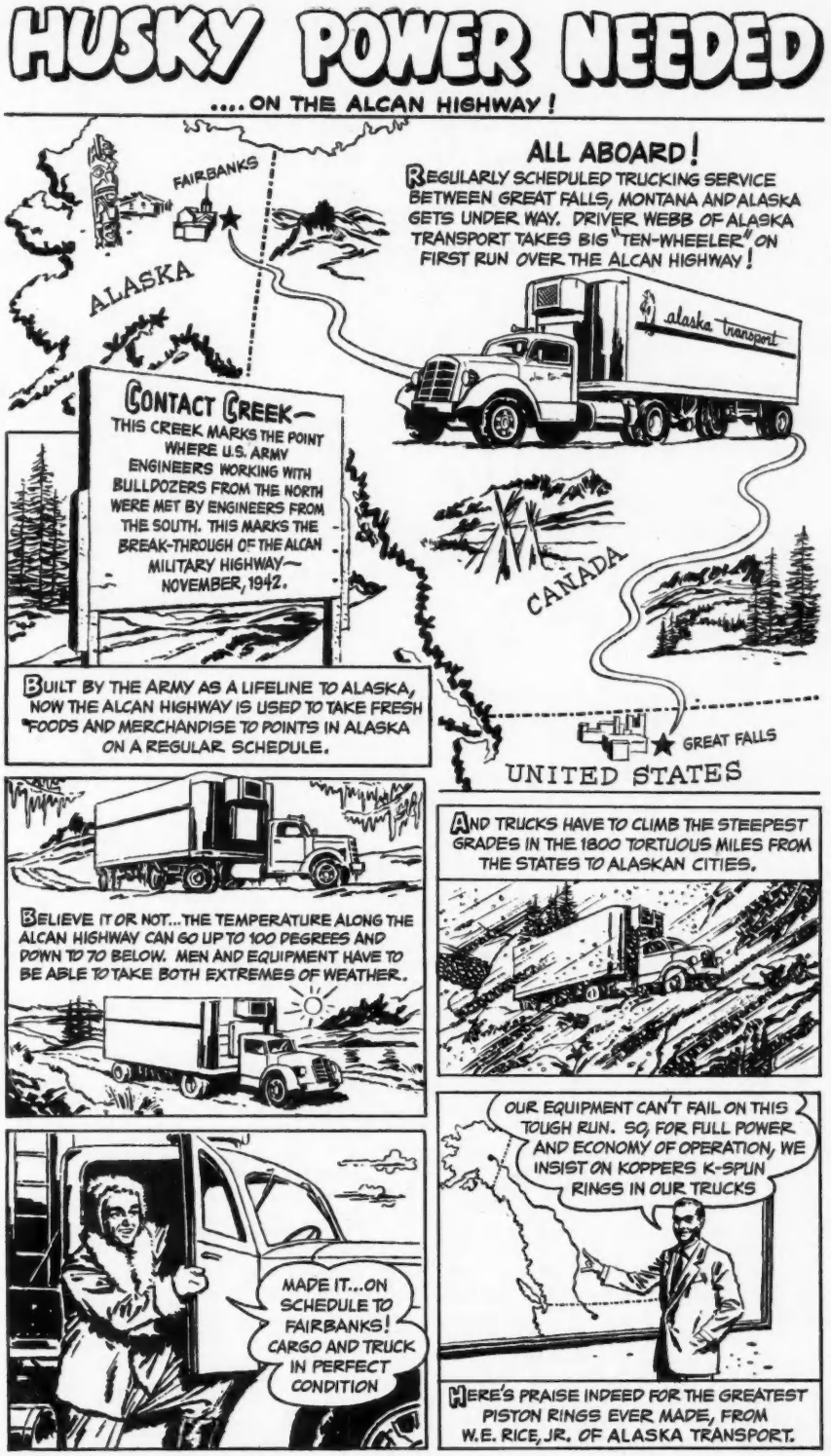
Piling Up Transportation Records

In Alaska Transports—in the new Pan American Stratocruiser—in submarines—in giant oil tankers—in cross-country trucks and buses—Koppers K-Spun Piston Rings are setting new records for power and economy.

There are many reasons why so many leaders in the field of transportation insist on Koppers K-Spun Piston Rings in their gasoline and Diesel engines. Find out now why it will *pay you* to standardize on these revolutionary rings. Koppers Engineering Department will be glad to tell you the whole story. Write today.

Guaranteed

American Hammered Piston Rings made of K-Spun with Porous Chrome Plating are guaranteed against breakage on installation or in service for the life of the engine!



TRANSPORTATION

Hammered

PISTON RINGS

KOPPERS



LAUGH IT OFF

While his playboy aspirations burned, the southern traffic representative for Fleet-Fleet Motor Express, found that his pockets weren't exactly bulging with money. Something, he decided, would have to be done about that. He'd have to get a raise, that was all there was to it.

Three letters to the home office suggesting that they look with more financial favor on their Southern representative brought no reply. Finally, in desperation, the freight man sent this telegram: "If no raise is granted within two weeks, count me out."

Back came the answer: "One two three four five six seven eight nine ten."

CCJ

The kindly old lady stopped before the blind man on the corner, fumbled in her purse and then gave him a two-dollar bill.

"Lady," said the blind man, "two-dollar bills is bad luck. Ain't you got two ones?"

"Mercy, how did you know it was a two-dollar bill if you're blind?"

"I ain't blind, lady. It's my partner that's blind. Dis is his day off an' he's at the movies . . . . Me, I'm a deaf mute."

CCJ

Rate Clerk: "Whenever I see your mother, we end up in an argument."

Girl Friend: "You don't know how to handle her. Why don't you do what my father did?"

Rate Clerk: "What did he do?"

Girl Friend: "He killed himself."

CCJ

The truck dispatcher was taking advantage of his day off to visit his maiden aunt in an adjoining city. His young son went along on the trip. When they were ready to return home the great aunt gave the boy a kitten. He carefully carried it in a covered box and took it on the bus with him. During the silence of a 20-minute stop-over, the youngster asked this question: "Dad, is my kitten a man kitten or a lady kitten?" Everyone on the bus listened hopefully.

"A man kitten," said the father.

"How do you know?" the boy persisted.

You could have heard a pin drop as the dispatcher promptly replied:

"Well, he has whiskers, hasn't he?"

CCJ

Auto Parts Clerk: (to new bride at breakfast) "My dear, I wish you could make bread such as my mother used to make."

New Bride: "Well, dear, I wish you could make the dough that father used to make."

CCJ

Bus Mechanic: "If there were four persons on your bus—three men and a beautiful girl—and the girl got off, how many persons would be left on the bus?"

Driver: "None."

Mechanic: "Wrong, there would still be four."

Driver: "I admit you know arithmetic and maintenance problems but you don't know men."

CCJ

The tank fleet operator had been out of town on business and returned unexpectedly. A pair of men's shoes were on the floor of his wife's room. He went into a white fury. Picking them up, he looked at them, compared them with his own shoes and then his anger subsided. He put them down greatly relieved. "For a minute I was going to tear the house down," he said to his wife. "I thought the maid had forgotten to put my shoes away, but I see these are not mine."

CCJ

A former garage operator accepted a job as principal of a country school house in the Tennessee hill country. A keen-eyed mountaineer led his overgrown son into the schoolroom and announced — "This here boy's arter larnin'. What's yore bill o' fare?"

"Our school, sir," replied the one-time garage man, "teaches arithmetic, reading, spelling, algebra and trigonometry."

"That'll do," interrupted the old man, load him up with trigger-nometry; he's the only pore shot in the family."

CCJ

The automotive electrician was coming down the street in a barrel.

"What's the idea," growled a cop. "Are you a poker player?"

"No," replied the repairman, "but I just spent the evening with some guys who are."

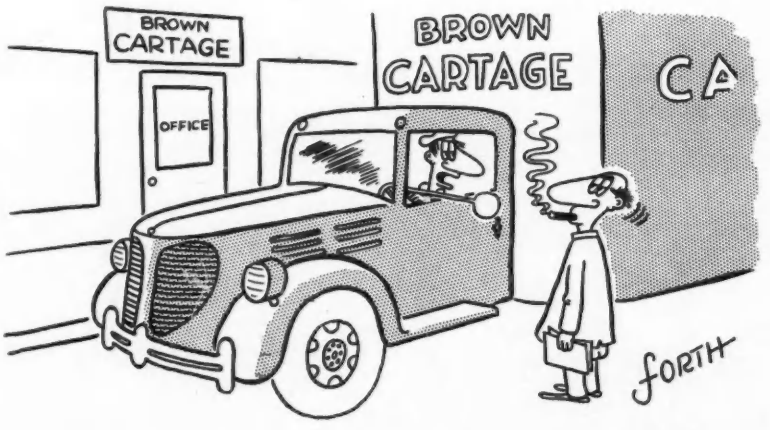
CCJ

Steno Lou: "Did you hear about the two flies who met in a bugle?"

Steno Sue: "No, what about the two flies that met in a bugle?"

Steno Lou: "They went off on their first toot together."

(Resume Work)



"Would you start it for me, sir—I've never driven before!"

Hydraulic POWER STEER



TURNS WHEEL with *Fingertip* EASE

Hydraulic Power Steer functions so smoothly and easily that even a six-year old boy (shown in photograph) can turn the front wheels of this Oshkosh truck with one hand—while it's *standing still*. Power Steer, as properly engineered by Oshkosh, makes light work of driving in sand, mud, gravel or other soft terrain.

OSHKOSH HAS WHAT IT TAKES FOR TOUGH JOBS

For pulling heavy trailer loads . . . snow removal . . . highway maintenance . . . hauling out of a pit . . . heavy construction . . . OSHKOSH, with powerful traction in ALL wheels, is dependable, efficient equipment. Fine engineering, plus rugged construction, keeps them on the job year after year with minimum of upkeep. Ask any Oshkosh user!

OSHKOSH

4 and 6 WHEEL DRIVE TRUCKS

CABLE ADDRESS: "OSHMOTOR" OSHKOSH

SERVICE STATIONS LOCATED AT CONVENIENT POINTS IN THE UNITED STATES AND CANADA

OSHKOSH MOTOR TRUCK, INC.

OSHKOSH WISCONSIN

PROTECT IGNITION SYSTEMS WITH

MoPar EVR-DRY SHIELDING



ENGINEERED
by Chrysler Corporation



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by Chrysler Corporation

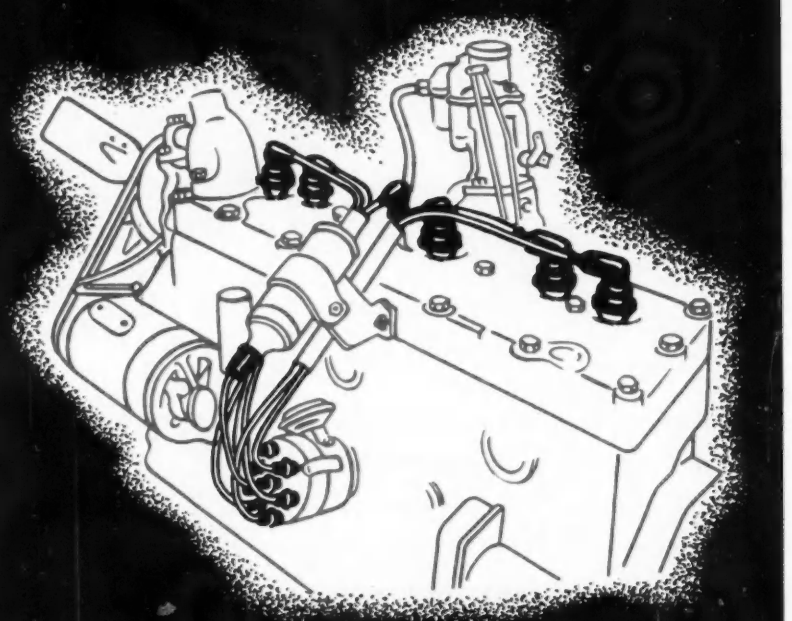


SUPPLIED
by Chrysler Corporation

Aids starting in wet or foggy weather

Avoids stalling from splashing water

Helps save fuel



HELPS PREVENT
Poor Combustion • Hit-or-miss Firing
Harmful Shorting • Slow Starting • Fuel Loss

CAUSED BY
Rain, snow, fog, dust, dirt, sand and grease on distributor, coil, and spark plug connections.

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CHRYSLER CORPORATION, PARTS DIVISION, DETROIT 31, MICHIGAN



CRACK ~~POT~~ UP DRIVERS

Defense Driving Keeps De Fence Off De Fenda

Thy brothers keeper — that's you Bud, when you're herding that c a r g o shover, daytime, nighttime, summertime and even Saturday afternoons. You have a flock of "have-to-do's" if you get home safely and get the *other* driver home without a crack-up.

Time was when a driver had to think only of himself, his truck, his cargo, his schedule, his own driving technique. Today, if he wants to save his neck, he must also be responsible for these same things in 1. the guy ahead, 2. the one behind, 3. the vehicle approaching, 4. the man pulling out from the side, and 5. the bird two miles away he will meet shortly.

Sometimes its pretty tough trying to figure out what the other fellow wants to do. It's safe to assume this: He wants either all the road or a good portion of it. He wants to drive as fast as the law and the condition of the road allows. He wants to see around you and all the sights at the same time. He wants to k e e p rolling. Sometimes he wants to do all these things safely.

He *may* signal you, but you can't always depend on his muscular contortions. So you must figure his signal may mean anything from "left hand turn" to "boy, what a shape over there."

He may be on a bender, but keep him off your fender. If he doesn't know how to drive, you do. Then show him by example how courtesy, consideration and care can save a collision.

Don't try to block a blockhead. Give him the road instead of the horn. Don't try to outwit a dim-wit. He may have zigged when he should have zagged.

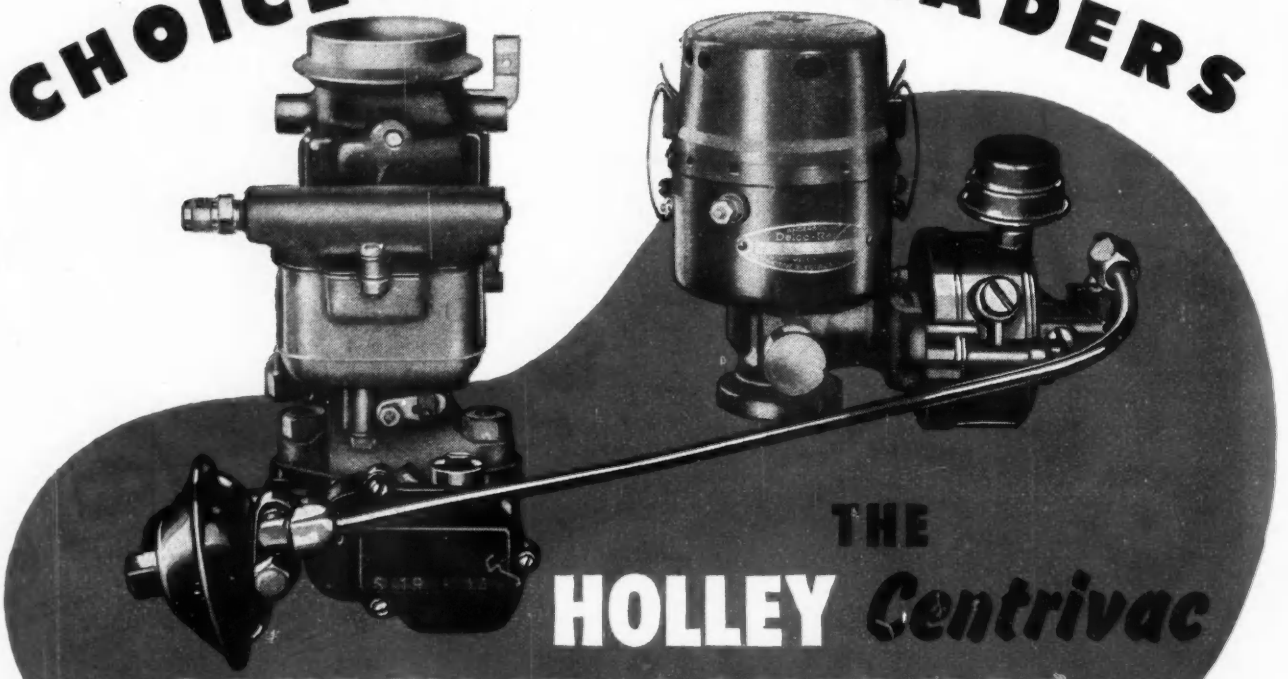
Sometimes the other guy loses control—his vehicle, his horn, his lights, yes, his temper. That's your cue to help him help himself out of a smash-up.

As y o u r brother's keeper, keep your brothers safer. If they live longer, they may learn more about d r i v i n g better. (Show them the safety study page 83 of this issue and let them bone up on defensive driving.) So miss them. Leave the crack hitters to the ball park and the crackpots to perdition. It's good old age insurance.

Keep Your Eyes on the Wise Guys, but Keep Your Feelings Secret

Reprints of the above are available at nominal cost. Write the Editor

CHOICE OF THE LEADERS



THE HOLLEY *Centrivac* SANDWICH GOVERNOR

Combined with the **DELCO** *Distributor*

REDUCES POWER LOSS: The Holley Centrivac Governor does not choke the engine when pulling heavy loads up hills because governor throttle remains wide open until the engine reaches its governed speed. Hence, the Holley Governor reduces power loss and improves operating efficiency.

PROVIDES FASTER ACCELERATION: The Holley Governor permits the engine to accelerate normally since the governor throttle remains wide open up to desired control point of engine speeds.

ELIMINATES SURGING: Truck drivers appreciate the steady flow of power, free from surging, which has been accomplished by the unique and exclusive design of the Centrivac principle of centrifugal air valve control over a vacuum powered diaphragm.

IMPROVES SPEED REGULATION: The new Holley Governor is operated by a vacuum powered diaphragm which is controlled by a centrifugal air valve mounted on the side of distributor. This insures a more even flow of power—greatly improved engine performance—a higher economy factor.

INSURES SMOOTHER OPERATION: Because engine surging has been successfully eliminated, truck operation has been improved. Driver objections to governor controlled vehicles have been largely overcome with the Holley Centrivac Governor, while wear and tear on a driver's nerves are removed, and fatigue factors reduced to the minimum.

ECONOMICALLY INSTALLED: Due to its revolutionary design, the Holley Centrivac Sandwich Governor can be installed on most popular truck designs without need for special drive, linkage, or adaptor accessories. Only one piece of metal tubing is used, connecting the governor control valve with the governor.

STANDARD EQUIPMENT ON

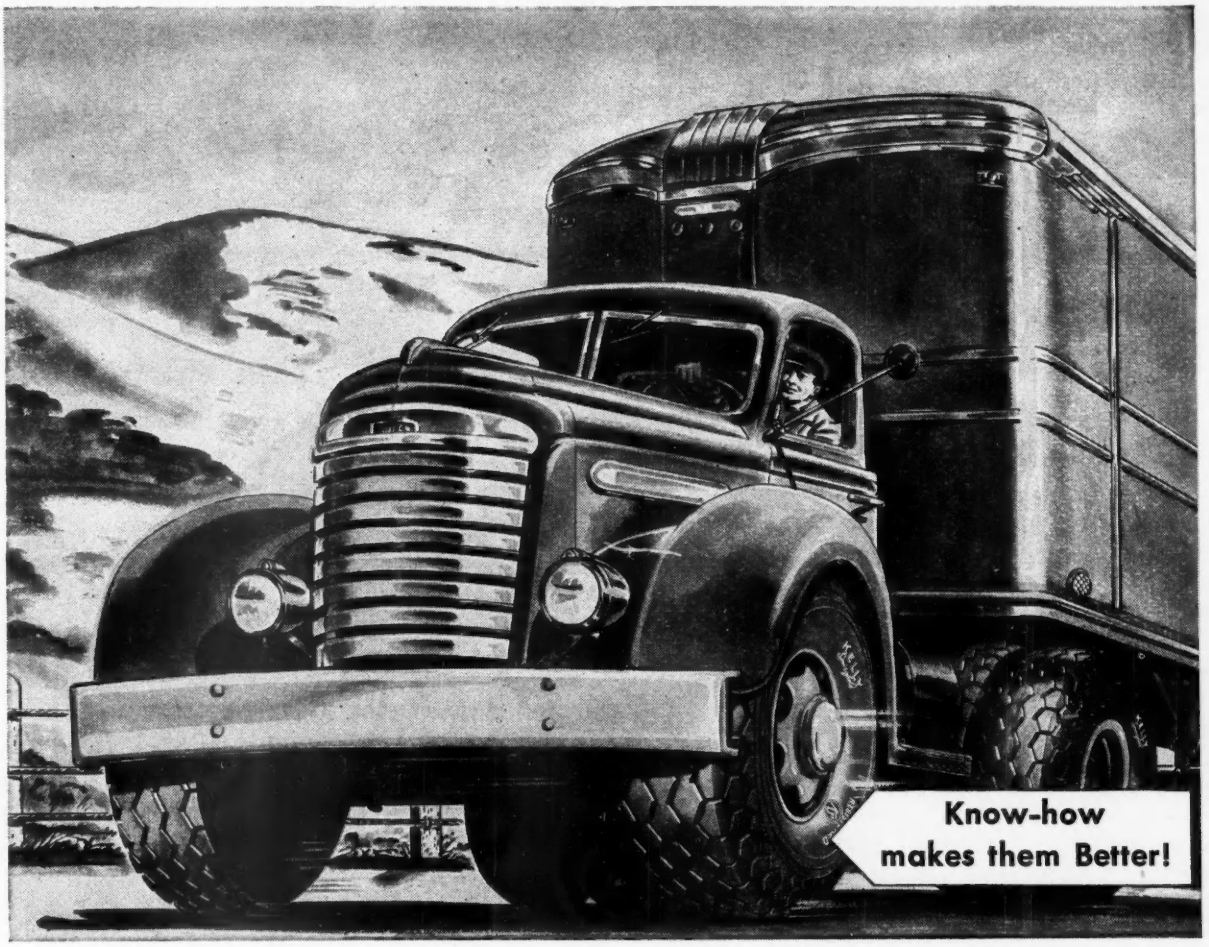
AUTOCAR, CHECKER BUS, GENERAL AMERICAN AEROCOACH, INTERNATIONAL HARVESTER, WARD LA FRANCE, FLEXIBLE BUS, GENERAL MOTORS TRUCK AND COACH.

ALSO AVAILABLE FOR OTHER POPULAR MAKES OF TRUCKS

HOLLEY *Carburetor Co.*

5930 Vancouver Ave.
DETROIT 8, MICHIGAN

AUTOMOTIVE EQUIPMENT AND ACCESSORIES



OPERATION "On Time"

. . . when your cargo rolls on KELLYS!

"On-the-nose" deliveries . . . quick pick-ups . . . clockwork precision . . . that's what you get when your trucks roll on Kellys!

And today's Kelly is tougher than ever. Exclusive Armorubber tread actually outwears steel—giving you longer wear . . . extra safety . . . added mileage.

What's more, into each Kelly Trucker's Tire goes the careful workmanship, the *know-how* that have characterized Kelly tire-building for 55 years!

Switch to Kellys on *your* fleet now—and cut your tire costs *on any type of operation.*

THE KELLY-SPRINGFIELD TIRE COMPANY, CUMBERLAND, MARYLAND

KELLY REGISTERED | KELLY COMMERCIAL HEAVY TREAD | KELLY DUAL TRAC | KELLY LUG TRAC | KELLY RIB TREAD | KELLY DELIVERY TRUCK TIRE

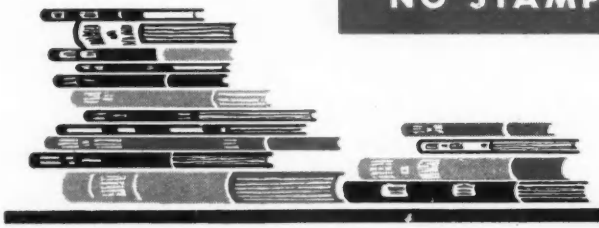


KELLY Springfield THE TRUCKER'S TIRE

A TOUGH KELLY FOR EVERY JOB!

FREE PUBLICATIONS

USE FREE POSTCARD NO STAMP NEEDED



A selected list of the latest literature—catalogs, pamphlets, charts—chosen to help fleetmen improve operation and maintenance

L30. Tune Up Data

Here is a practical review of instruments used for precision automotive tune up—an 8-page publication that will be found useful in any shop. Presenting a general round up of instruments and gages designed for such work, the text also covers typical causes of engine malfunctioning with a guide to the reaction of such failures as shown on the dials of the instruments. Thus gage symptoms are linked with possible causes so the mechanic can speed his diagnosis and understand the operating principles of his equipment.

In other instances cutaway views and wiring diagrams show operating principles and test procedures. Each instrument is illustrated to clarify points developed. In this way the following instruments are discussed in detail: vacuum gage, compression gage, tachometer and cam angle meter, voltmeters, ammeters and ohmeters, instruments for ingition coil and distributor tests, as well as instruments for checking the fuel system performance.

This information should provide valuable technical background for your men. It will also serve as a check upon your own instruments and the proper use of those instruments in engine tune up in your own fleet.

Write L30 on the free postcard for a free copy.

L31. Truck Industry Data

This revised edition of "Economic Giant," a pocket-size booklet showing the economic importance of America's trucking industry as a creator of employment, a payer of taxes and a purchaser of goods is now available. Rapid post-war growth of the trucking industry to a position of major importance in the nation's transportation system made necessary a revision of the figures contained in original booklet.

The booklet uses illustrated comparisons to convey at a glance some of the facts about an industry which is the largest single employer of personnel except for agriculture, giving direct employment to more than 5,000,000 workers.

To familiarize yourself with the importance of this industry in today's scheme of things, write L31 on the free postcard.

L32. 6-Wheelers

Dramatizing the ever-growing importance of 6-wheel trucks in industry today, a 24-page, file-size booklet entitled "Six Wheelers In Action," features more than 60 on-the-job photographs, including many unusual action shots. Illustrating the diversified fields in which the six wheeler is now being used, the photographs were assembled from all parts of the country.

Six wheelers of all sizes and types are shown in these authentic working views. Lumbering in the Northwest, excavating in Illinois, machinery moving in Detroit, strip mining in Ohio, transit-mixed concrete hauling in New York, and truck crane and shovel work in a dozen localities, all are among the more than 30 operations illustrated.

Copies of the new booklet can be obtained by writing L32 on the free postcard.

L33. Autocar Booklet

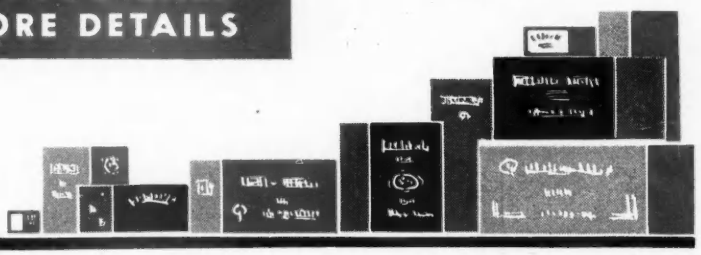
Entitled "Tough Tested Trucks," a new 20-page book presents a story of the men, materials and machines that are engaged at the Autocar factory in promoting the performance and durability of Autocar trucks and tractors.

Pictures range from one of a mammoth truck-shaker, a machine which, like an angry giant, wrenches a truck to see what it can stand, to shots of a bicycle, built to gauge the efficiency of truck brakes, and other instruments which measure truck parts by air.

Primarily an illustrated description of research, development and quality control at the Ardmore plant, the book should be instructive to Autocar owners. For a copy of this booklet write L33 on the free postcard.

NEW PRODUCTS

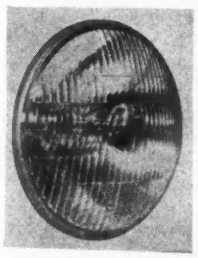
USE FREE POSTCARD FOR MORE DETAILS



Illustrating and reviewing briefly many of the newest developments in parts, accessories, shop equipment and tools. For more information mail free postcard

P101. New Sealed-Beam

Light of greater intensity and whiter quality is said to be provided through this "Bulls-Eye" lens and improved aluminized reflector. This design embraces a method of picking up unreflected light from the bulb filament and projecting it into the main headlamp beam. But because the increased candle-power is controlled through the bulls-eye, it does not place glare on the approaching driver.



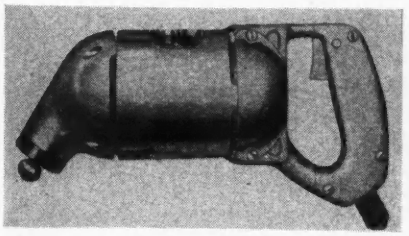
A new means of sealing the glass lens to the metal back is used so that the unit is said to operate even if the lens is cracked or broken. Electric Auto-Lite Co., Toledo, O.

P102. Brake Lining Gage

Instant selection of brake lining thickness for any installation is made possible by the Fraser Brake Lining Gage when positioned inside the drum circumference and allowed to expand under spring pressure. Of steel construction, the gage is equipped with hardened ball bearings for contact points. Grizzly Mfg. Co., Paulding, Ohio.

P103. Vibro Centric Driver

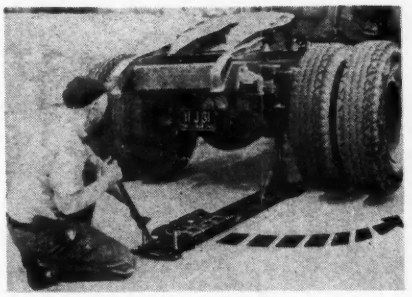
This heavy-duty 55-deg driver is for use in reconditioning truck, tractor and diesel valves where a high-speed driver is essential. The angle drive spindle incorporates a positive vibrating action which lifts the grinding stone from the seat once each



revolution and prevents stone loading. Spindle speed has been stepped up to 12,000 rpm. Black & Decker Mfg. Co., Towson, Md.

P104. Drum Safety Jack

This U-12 Drum Safety Jack can be spotted and aligned under axles without crawling under the truck. Jack has a swivel-action base so that its dolly is easily positioned under wheels by swinging the extension dolly which is provided with rollers.



Alignment is maintained and wheels, axle or bearings are easily removed or replaced without damage to oil seals or bearings. Drum Jack Corp., Cleveland, Ohio.

P105. Flexible Hose

Hose replacement time is reduced to five minutes with use of the Roberts flexible radiator hose which will bend, stretch, compress or twist to any shape without kinking and thereby permit a full flow of liquid at all times.

Built of compounded rubber tubing and new alloy coil spring, this hose, according to its manufacturer, cannot be damaged by overheating or boiling engines. Roberts Flexible Hose Co., Inc., Chicago, Ill.

P106. Hydraulic Fluid

A feature of Indian Head Hydraulic Brake Fluid for passenger cars, light trucks and similar equipment is that it will not gum or congeal at temperatures as low as 70 deg. below zero.

Said to mix with all standard brake fluids, this product, the manufacturer claims, will not attack metals in brake systems or cause rubber plunger cups to swell or seize. Permatex Co., Inc., Brooklyn, N. Y.

(TURN TO PAGE 52, PLEASE)

All-New and...
Just as Rugged as They Look



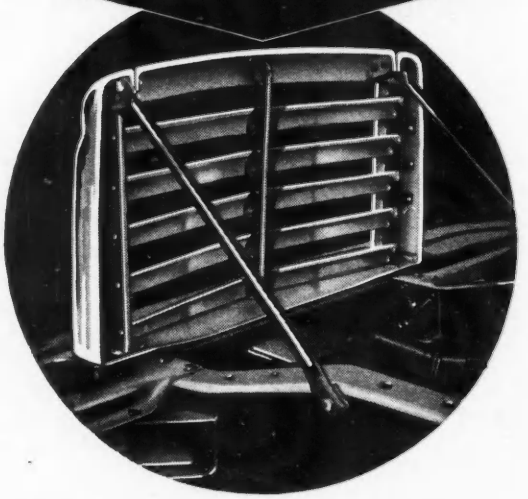
There's a new look in heavy duty trucks . . . all-new "H" line GMCs. These great new trucks, in weight ratings from 19,000 to more than 90,000 pounds, pace the entire heavy duty field in styling that adds to the prestige of your business. And they pace the field in design and engineering that give you better performance, lower operating costs, longer life.

Four new gasoline engines offer greatly increased power, in addition to traditional GMC extra value . . . famous four- and six-cylinder GM 2-cycle Diesels have higher compression for even greater agility and economy. New, stiffer, straight side rail frames, new wide-track axles, new broad-beam, extra comfort cabs . . . new features by the score all make all-new GMC "H" models best for all heavy city and inter-city transport. Let your nearest GMC headquarters give you complete details.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

GMC
GASOLINE • DIESEL
TRUCKS

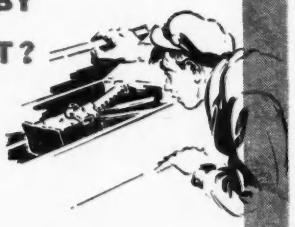
THE INDUSTRY'S ONLY BUMPER-BUILT FRONT END



Typical of GMC "H" line ruggedness are angle-braced, frame-mounted radiator grilles with top and sides of spring steel bumper stock, heavy gauge fenders, wide, thick bumpers . . . for complete front end protection, axle to emblem.



ARE YOUR PAY LOADS DELAYED BY INADEQUATE JACKING EQUIPMENT?



CAN YOUR DRIVERS ACTUALLY CHANGE A TIRE ON THE ROAD?

Here is what we mean:

Are there jacks in their tool boxes?

Do they work?

Are they the right capacities to lift the loads?

Will they raise the tires off the ground?

Keep the "pay" in "pay load" . . . arm your trucks with the *right* jack, to get back on the highway *fast*. Make a "Tool Box Inventory"! And if your trucks need jacks — give yourself insurance by buying the *best!* Buy Blackhawks from your Blackhawk Jobber.

***A Product of* BLACKHAWK MFG. CO.**
Department J-1199 Milwaukee 1, Wisconsin



BLACKHAWK

NEW PRODUCTS

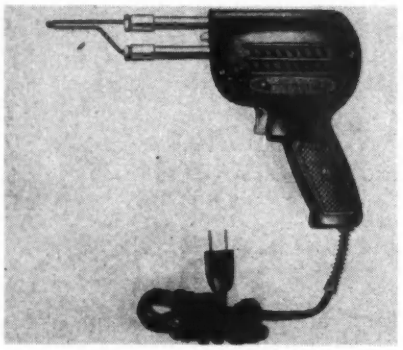
USE FREE POSTCARD FOR MORE DETAILS



Continued from Page 49

P107. Soldering Gun

Fast 5-sec dual heat, prefocused spotlight and rigid tip are chief features of the new Weller gun for heavy-



duty soldering. Designated as Model WD-250 with a power rating of 250 watts, the gun handles every type of soldering in electrical circuits including generator commutator work. A built-in spot light increases visibility. Weller Mfg. Co., Easton, Pa.

P108. Midget Wrench

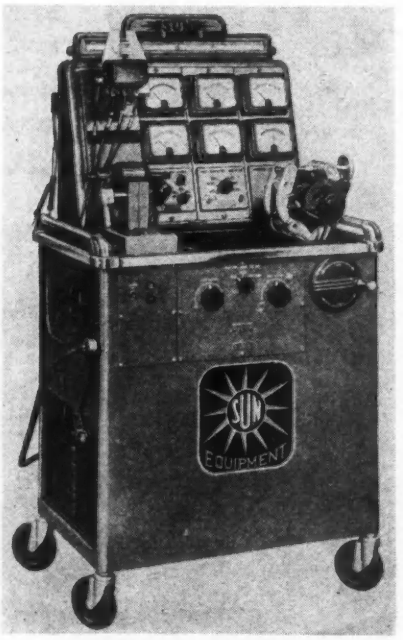
This series designed for electrical, carburetor and instrument work provides a wide range of sizes. Tools are drop-forged from alloy steel and fully heat-treated for strength and long life. No. BW-4L set has four wrenches with eight sizes of hexagon openings ranging from 3/16 to 11/32 in. Set No. BE-8L has in addition to these four wrenches, four open-end wrenches in sizes of 7/32 to 3/8 in. Owatonna Tool Co., Owatonna, Minn.

P109. Fire Control

This automatic, under-the-hood fire extinguisher goes into action whenever the engine compartment temperature reaches 255 deg. Automatic release of the extinguishing fluid is accomplished by the action of a coiled spring plunger, which is unleashed by melting of a fusible clip. Because the boiling point of pure carbon tetrachloride is only 168 deg, fluid leaves the container in vaporized form, instantly enveloping and smothering the fire. Red Comet, Inc., Littleton, Colo.

P110. Generator Tester

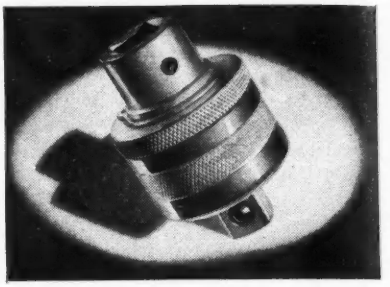
This new bench-type generator and regulator tester has an improved growler for armature tests of shorts, open circuits and resistances so constructed that after initial hookup of any standard regulator—either with its own generator or the master generator provided—all tests can be made without further wire changes.



A heat compartment cuts regulator heating time to one third normal, and an automatic timer is provided. Sun Electric Corp., Chicago, Ill.

P111. Ratch-A-Daptor

This tool converts to left or right ratchet by a simple ring shift. It is designed for any ½-in. drive



T-handle, speeder, flex or extension handle. Herbrand Division, Bingham-Herbrand Corp., Fremont, Ohio.

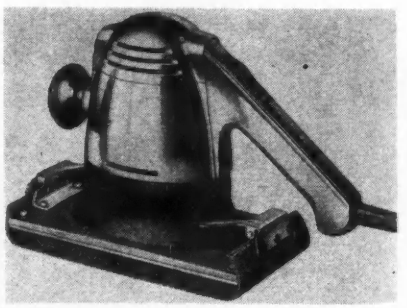
P112. Engine Tester

This new spark plug adapter (an engine pick-up for pressuregraph testing) makes it possible to run dynamic pressure tests without interrupting the firing of a single cylinder.

Employing a standard brand spark plug as an integral part, the new spark adapter engine pickup is inserted into the cylinder head. Adapter will operate in diesels, C.F.R., aviation fuel test engines, 2-cycle engines, or any other engine using spark combustion. Electro Products Laboratories, Chicago, Ill.

P113. Electric Sander

This electric heavy-duty sander, Model 5000, is said to have all features of air driven sanders and runs cool under all conditions. Vibration-



less, it weighs seven lbs and has 38 sq in. of abrasive area. Unit is driven by a 115 volt ac-dc, ¼ hp motor. National Air Sander, Inc., Rockford, Ill.

P114. Oil Refiner

This Automatic Oil Refiner uses a catalytic process with high tempera-

(TURN TO PAGE 148, PLEASE)

THESE TUBES CUT COSTS FOR YOU!



REDUCE operating costs! Reduce maintenance costs! Reduce "down-time"! Increase the efficiency and useful life of your fleet with WOLF'S HEAD MOTOR OIL.

WOLF'S HEAD MOTOR OIL—100% Pure Pennsylvania, Premium Grade—is refined three steps further than ordinary oil. It is richer, tougher—always free-flowing—more heat resistant—and free from trouble-making impurities that cause sludge and unnecessary engine wear.

WOLF'S HEAD HEAVY DUTY MOTOR OIL is refined from the world's finest, most expensive crude—100% Pure Pennsylvania—and skillfully fortified with scientifically selected additives. It is a superior oil—in *any* type of heavy duty service—for *every* heavy duty oil requirement!

• Strong tough film • Excellent detergency
• Unexcelled dispersancy
• Maximum resistance to oxidation
• Superior stability—non-corrosive to bearings

WOLF'S HEAD LABORATORY CONTROL SERVICE PLAN

enables fleet operators to establish sound operating and maintenance practices by providing specific recommendations—for each unit of the fleet—based on analysis of crankcase oil. This costly service is available—*free of charge*—to all fleet operators. Consult your local Wolf's Head Distributor or write to us for further information.

Send for Wolf's Head Heavy Duty Folder containing documented proof of the superiority of WOLF'S HEAD HEAVY DUTY MOTOR OIL. Wolf's Head Oil Refining Co., Inc., Oil City, Pa., New York 10, N. Y.

WOLF'S HEAD

MOTOR OIL AND LUBES

100% Pure Pennsylvania "Premium Grade" — Member, Penna. Grade Crude Oil Association

10-TON TRUCK CAN'T

NO IFS...NO ANDS...NO BUTS!

APPLY Met-L-it AND Met-L-it FIBER ACCORDING TO DIRECTIONS—AND GET

GUARANTEED PERMANENT ADHESION



Here Are More Reasons Why Met-L-it Saves You More Money on Body Repair Work:

- ✔ **Met-L-it Won't Blister . . .**
  You can use any paint or enamel on Met-L-it.
- ✔ **Met-L-it Won't Flake or Crumble . . .**
  You can feather-edge Met-L-it perfectly.
- ✔ **Met-L-it Does a "First Class" Job at Less Cost!**
  Equals any repair method being used today and lasts just as long.

• Met-L-it doesn't call for special skills or expensive tools—Met-L-it cuts labor and material costs. Ask your WHIZ jobber about Met-L-it package sizes and assortments, and their prices.



PRODUCTS OF

Hollingshead

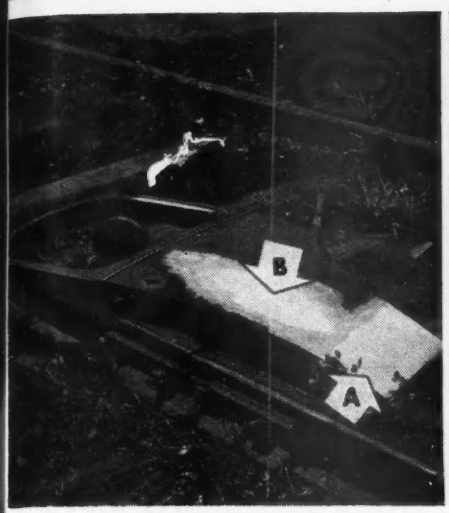
LEADER IN MAINTENANCE CHEMICALS



REPAIRS RUSTED-OUT AUTO BODY AND FENDER SECTIONS—FILLS DENTS AND SCRATCHES

T LOOSEN Whiz Met-L-it*

HERE'S SMASHING PROOF THAT Met-L-it HOLDS ON!







FIRST WE PATCHED IT!

THE RUSTED-OUT AND DENTED auto door panel shown has been repaired in two ways. Repair (A) was made by covering the rusted-out area with Met-L-it Fiber, and then applying Met-L-it over the Fiber. Repair (B) is a deep dent filled with Met-L-it alone. In both cases the metal was sanded to a clean, bare surface before the Met-L-it was applied. The repairs shown here have been feather-edged just as in a finished job.

THEN WE SMASHED IT!

WE ROCKED A 10-TON TRUCK back and forth over the repaired door. The two big wheels of the truck crushed and crumpled the metal of the door, and strained the Met-L-it repairs far more than the repairs would ever be strained in actual service. The door was bent and twisted—and so was the Met-L-it. These were exaggerated conditions, but we were out to demonstrate PERMANENT ADHESION.

PROVED—PERMANENT ADHESION!

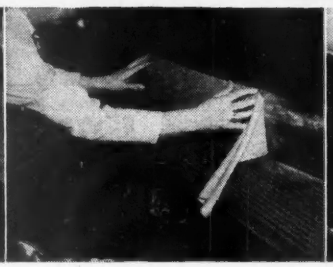
THE Met-L-it AND FIBER STAYED PUT! The tests proved that Met-L-it and Met-L-it Fiber adhere even under exaggerated strains and impact. Notice above that the Met-L-it is still perfectly feather-edged—hasn't cracked or crumbled in any part of the repairs. There is still a perfect bond between the metal and the Met-L-it! That's what we mean by GUARANTEED PERMANENT ADHESION.

NEW DEPENDABLE Product For Cold Metal Repairs!

PUT IT ON RIGHT—Met-L-it STAYS TIGHT



BEFORE APPLYING FIBER, sand clean the metal surrounding the damaged area. Cut the Met-L-it Fiber to shape and dip in a shallow pan of Met-L-it Solvent. Use only Met-L-it Solvent—other solvents will destroy the Fiber's adhesive quality.



APPLY THE FIBER smoothly against the bare metal so that it makes full contact and follows the contour of the body section. When the Fiber has dried thoroughly, feather-edge it to surface contours.



APPLY Met-L-it by brushing, knifing or spraying. Put on several coats, allowing about one minute between coats for drying. Extend the Met-L-it coats about an inch beyond edge of Fiber. Allow to dry well.



SAND Met-L-it with a medium grade sandpaper or disc. Met-L-it will sand down to a perfectly smooth feather edge.

PAINT Met-L-it as you would any bare metal. Met-L-it is not affected by enamel or lacquer thinners, and will not blister or check.



FOR MORE INFORMATION ABOUT Met-L-it

CALL YOUR WHIZ JOBBER

*Patent Pending



OR WRITE

R. M. Hollingshead Corporation
Camden 2, New Jersey

Dealers in Canada write to:
R. M. Hollingshead Company
of Canada, Ltd.
1130 Bay Street
Toronto, Ontario, Canada

SEALS LEAKING GAS TANKS: AN IDEAL GLAZING MATERIAL — MADE BY THE 70-30 COLD PROCESS

WHEN THE JOB IS *Tough*



ROSS BRINGS EASE . . . AND ECONOMY

JUST ABOUT as tough as they come is the steering job illustrated above. This is typical of the steering problems handled with ease and economy in any heavy duty service by Ross. Under any condition of road or operation, Ross gives complete steering satisfaction.

The Ross policy of incorporating advancements in design as they are proved by exhaustive tests has resulted in many recent improvements. Current Ross models have:

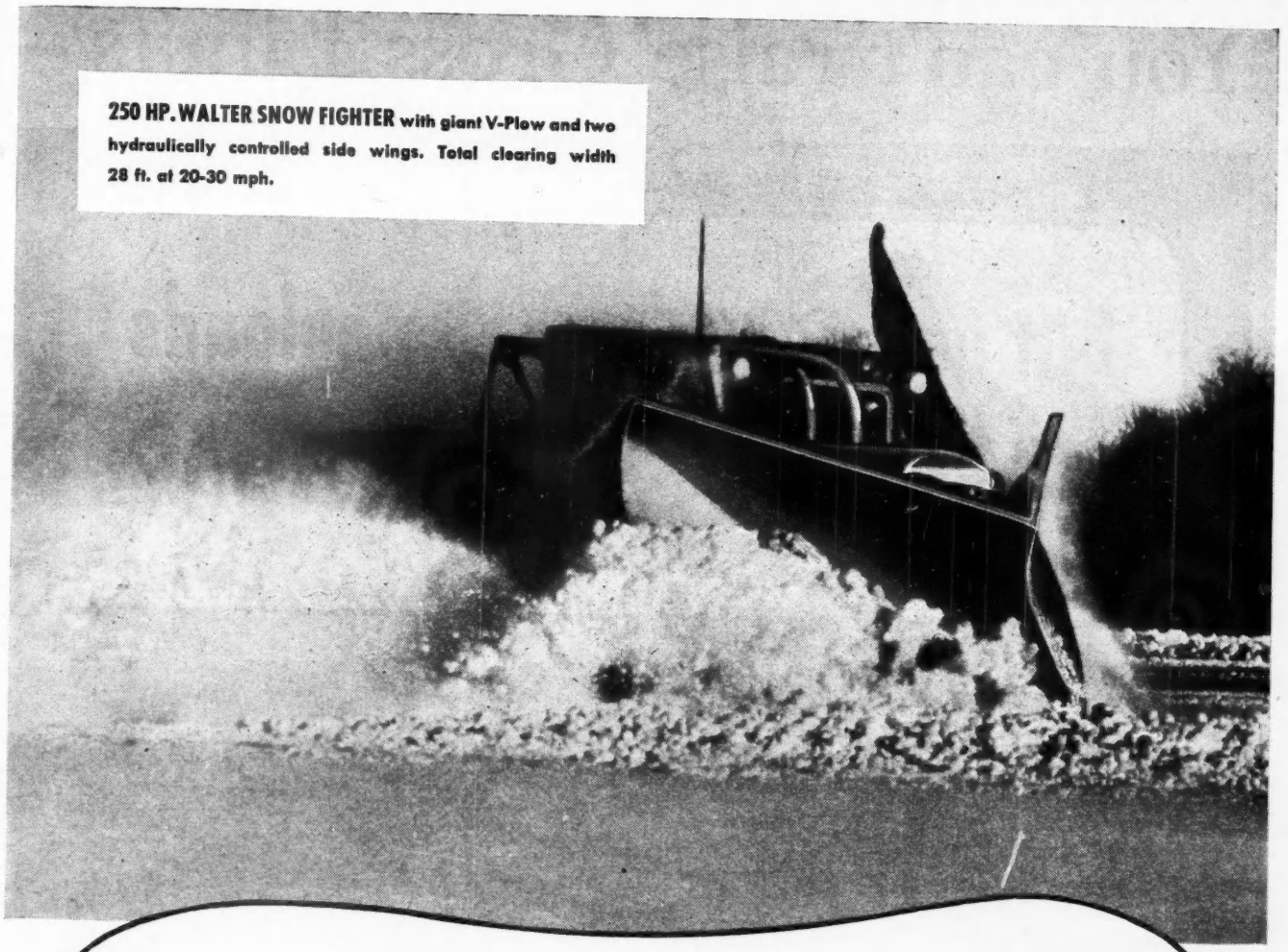
(1) *Increased mechanical reduction* . . . (2) *More compactness* . . . (3) *Reduction in weight* . . . (4) *Greater arm angular-travel* . . . (5) *Improved metallurgy* . . . (6) *Increased efficiency.*

Throughout 42 years of leadership in this industry, Ross gears have been distinguished for long life, simplicity of adjustment and maintenance of long-recognized qualities of safety, stability and performance. We invite discussion of any steering problem.

Ross

Cam & Lever ***STEERING***

ROSS GEAR AND TOOL COMPANY • LAFAYETTE, INDIANA



250 HP. WALTER SNOW FIGHTER with giant V-Plow and two hydraulically controlled side wings. Total clearing width 28 ft. at 20-30 mph.

No other snow removal equipment can match

WALTER SNOW FIGHTERS

—IN SPEED. 20-30 mph. sustained clearing speeds throw snow far off road, clear more miles per hour.

—IN POWER. 150-250 hp. engines provide tremendous power for any emergencies.

—IN TRACTION. Four-Point Positive Drive provides 100% traction in four driving wheels; no side-slipping or stalling.

—IN RUGGEDNESS. Specially designed and built for the gruelling demands of snow removal.

—IN VOLUME. Mount bigger plows and wings; displace greater volume of snow on each run; make widening out easier.

—IN VERSATILITY. Handle any winter conditions . . . high speed plowing—drift busting—scraping hard-packed snows—spreading sand and chemicals for ice control.

—IN SAVINGS. Cut your clearance cost per storm; keep roads open and traffic moving; reduce community losses.

WALTER
4-POINT POSITIVE DRIVE
SNOW FIGHTERS

GET THE FACTS! PLACE ORDERS *NOW!*

• Have your Walter dealer explain the advantages of the Walter Four-Point Positive Drive and other features. Write us for detailed literature. Act now to insure early delivery.

WALTER MOTOR TRUCK CO. 1001-19 Irving Ave. Ridgewood 27, Queens, L. I., N. Y.

You can't raise Gross Limits –

but you can increase payloads with Stainless Steel construction



U·S·S Stainless gives you...

BIGGER PAYLOADS · LONGER LIFE
LESS MAINTENANCE
BETTER-LOOKING EQUIPMENT

GROSS LOAD LIMITS are inflexible ... the lowest load limit on your route determines the maximum weight of your truck for the entire run. But you can make sure that the greatest possible amount of your gross is *payload* by operating Stainless Steel trailers.

Compared with other materials, Stainless Steel effects almost unbelievable *savings in weight* while actually increasing the strength of the unit. This is possible because of Stainless Steel's high strength and superior corrosion resistance.

In many operations, weight restrictions prevent the operator from taking full advantage of length allowances. With Stainless Steel construction, it is often possible to operate a longer unit—with greatly increased cubic content—and still stay within the weight limits.

In addition to bigger payloads, Stainless Steel gives you much longer life than ordinary materials. Stainless is immune to the destructive action of corrosion, weather and time itself. No painting is necessary and maintenance is reduced to an absolute minimum. And don't forget the advertising value of Stainless equipment's permanent good looks.

When ordering Stainless Steel trailers, it will pay you to specify U·S·S Stainless Steel. U·S·S Stainless is a perfected and service-tested material that lends itself to the most modern techniques of fabrication.

AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO · CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH · TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

9-1230

UNITED STATES STEEL

BOWER BEARINGS ARE SPHER-○-HONED



FOR GREATER DEPENDABILITY—LONGER LIFE

Extra years of smooth, trouble-free performance are built into every Bower SPHER-O-HONED bearing. This premium of dependability, the result of important new design and engineering improvements, keeps maintenance costs down —increases efficiency.

Contacting roll ends and flange surfaces of Bower SPHER-O-HONED bearings are spherical *before the bearing is installed.* This greatly reduces initial wear and resultant "end play." The large Bower oil groove solves oil failure problems by carrying a continuous supply of lubricant to all vital working parts. And the hard surfaces of Bower bearings mean greater precision, better alignment, longer life.

Leading manufacturers of earthmoving equipment use Bower SPHER-O-HONED bearings. They've found—and you will too—that for all-around reliable performance they're your best bearing buy.

For more complete information, write for the Bower Engineering catalog.

BOWER ROLLER BEARING COMPANY
DETROIT 14, MICHIGAN



BOWER

ROLLER BEARINGS

the SAVINGS in LOWER

"PER PACKAGE" delivery

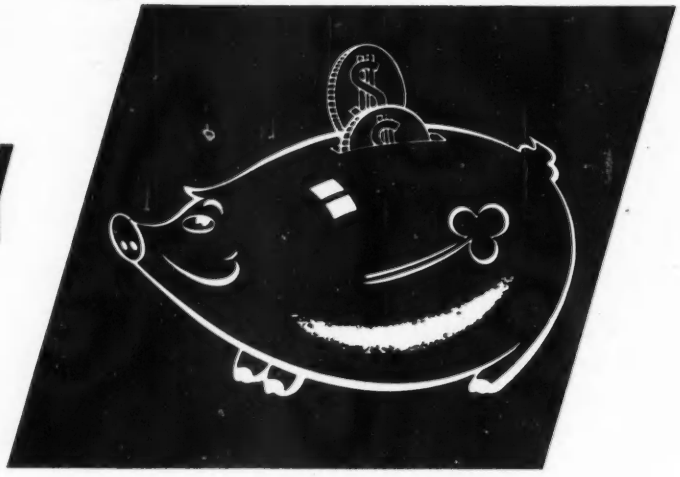
costs by using

YORK-HOOVER

designed BODIES

is just like EXTRA MONEY in the BANK

Savings in lower "per package" delivery cost contribute profits to *your* fleet operation when you use York-Hoover designed bodies. The reason for this is plain. It's the result of an *experienced study* of *your* particular needs plus *sound engineering* and *honest craftsmanship;* factors which make York-Hoover Bodies a profitable investment for you.







"MAINTENANCE AND OPERATING COSTS CUT by changing to Marathon V.E.P. Oil," reports Mr. Newland Mills, President of Maplehurst Farms, Indianapolis dairy. "We have operated our 50 delivery trucks and several passenger cars on V.E.P. for the past 8 years, and haven't had a single engine failure due to lubrication. And we've had no stuck rings or valves due to carbon and sludge."

Put 600 miles on the speedometer... with only 400 miles' engine wear

Laboratory proved in scientific tests . . . *highway* proved for 12 years by many of the largest fleets: Marathon V.E.P. Oil makes engines last 50% longer than they would with ordinary oil . . . keeps trucks on the job 50% longer between overhauls.



Change to MARATHON V·E·P OIL

Different, patented V.E.P. is the pioneer, heavy-duty oil. Its "magnetic-like" film guards against damaging *dry* starts. It *stays put* at high temperatures. Protects bearings against corrosion. *Keeps* engines clean—oil lines open, valves and rings free. And V.E.P.'s triple-plus film strength provides an extra margin of safety against pressure and shock.

Let a Marathon Fleet Engineer tell you about our complete line of automotive oils and lubricants.

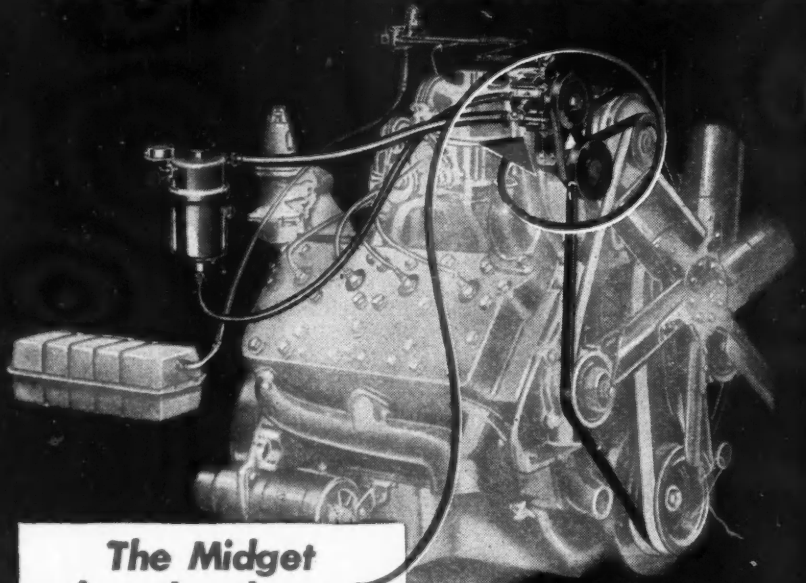
THE OHIO OIL COMPANY

Producers of Petroleum since 1887

GENERAL OFFICES: FINDLAY, OHIO. DISTRICT OFFICES: ROBINSON, ILL., INDIANAPOLIS, IND.

KELSEY-HAYES

OFFERS 30% to 50% MORE POWER TO TRUCK and TRAILER POWER BRAKE SYSTEMS



with the

KH AUXILIARY VACUUM POWER PUMP

Here's an improvement you can easily add to the present power brake system of your trucks and trailers . . . and one that you actually can't afford to do without, because it has a remarkable safety advantage over your present conventional vacuum brake operation:

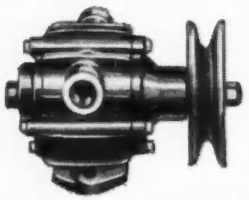
Maintains adequate reserve of vacuum power in the system, even when the engine manifold vacuum fluctuates widely, due to different operating conditions, engine wear or small leaks in the system.

Actually increases the vacuum power above the maintained adequate reserve, thus providing a far faster brake application that is 30% to 50% more effective, while retaining smooth action, easy control and low maintenance cost.

Kelsey-Hayes Auxiliary Vacuum Power Pumps are of utmost importance to every truck and trailer manufacturer, operator, and service man.

Kelsey-Hayes Distributors Will Gladly Furnish Fully Descriptive Literature.

The Midget that develops a GIANT'S strength!



Simple to install on V-8 or In-Line Engines . . .

Merely a small, simple addition to present, conventional power brake systems (no major units to replace).

Exceptionally sturdy, its few parts moving in a bath of oil have proven practically non-wearing during long, continuous service.

Complete kits available with dual check valve and lubricator for all power brake systems.



KH ASSURES PROVEN PRODUCTS AT

KELSEY-HAYES WHEEL COMPANY

DETROIT 32, MICHIGAN

Wheels—Hub and Drum Assemblies—Brakes—"Vacdraulic" Brake Power Units—for Passenger Cars, Trucks, Buses—made by Kelsey-Hayes' 4 Michigan Plants and Windsor-Canada Plant • "Magdraulic" Electric Brakes • "Lathan" Vacuum Power Brake Equipment for Tractor-Trailers—made by Kelsey-Hayes' South San Francisco-Lathan Plant • Wheels—Hubs—Axles—Parts for Farm Implements—made by Kelsey-Hayes' French & Hecht Plant at Davenport, Iowa.



Everybody Wins...

WHEN YOU FEATURE

PERFECT CIRCLE POWER SERVICE

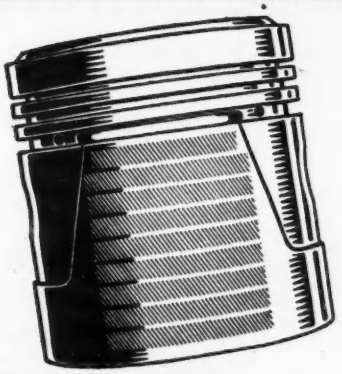
You Win because you sell more parts—give better, quicker overhauls—profit more from shop time—and gain *new* customers along with repeat customers! *Your Customers Win* for they get better repairs and faster service—at big savings!

All features of Perfect Circle Power Service — the Nurlizer, Manulathe, Plastigage, Taper Shim Bearing Adjusters and PC *Custom Made* Piston Ring Sets —work together to step up your business and your profits. Dealers everywhere are acclaiming this business-getter-and-builder for what it's doing for them now . . . when more business is really appreciated! Read about the service here, then get the full story from your PC distributor, or write Perfect Circle Corporation, Hagerstown 6, Indiana.

NURLIZER—

Sizes Pistons Quickly, Permanently!

PRAISED by dealers everywhere. By permanently displacing metal on the piston thrust faces, Nurlizing accurately increases the diameter to a desired, predetermined size exactly where the increase is most needed. At the same time, it gives the piston an interrupted surface that assures better lubrication, permits closer fit without danger of scuffing or scoring. Nurlizing stabilizes the piston, eliminates piston slap!



New life for old pistons — longer life for new pistons!

TAPER SHIM

Bearing Adjusters

CUSTOM MADE for the specific bearing and clearance correction required. Taper Shim Bearing Adjusters are individually packaged, pre-cut to avoid delay. Adjustment is better, too, because they are scientifically tapered for accurate vertical and horizontal fit.



PLASTIGAGE—

Saves Time and Labor!

BEARING CLEARANCES *should* be checked on *every* engine overhaul, if the job is to give complete satisfaction. PLASTIGAGE saves as much as ⅔ the time used by older methods. Profits go up as labor cost goes down!



CUSTOM MADE PISTON RING SETS!

ALL FACTORS—engine condition, make, model and type of service—are considered when determining the types of rings that go into *Custom Made Sets* for each particular installation. Whatever the combination, it has been selected from 62 specific designs proved to increase power, save gas and stop oil pumping most effectively.

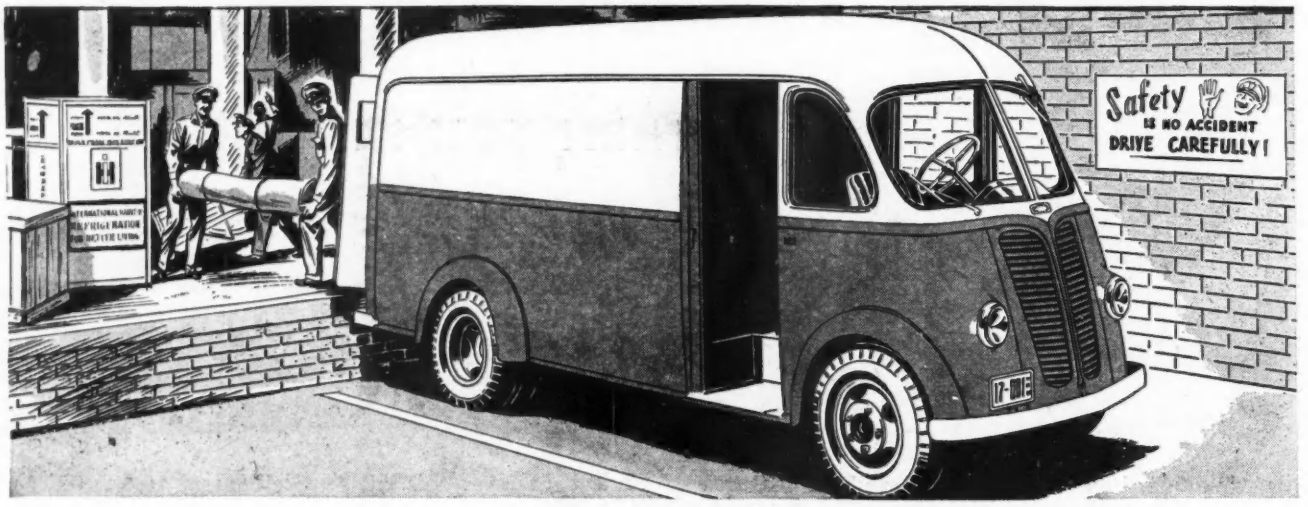
Perfect Circle Corporation
Hagerstown, Indiana



Perfect Circle

The Most Honored Name in Piston Rings

Look what America's most popular *multi-stop* delivery truck gives you *NOW!*



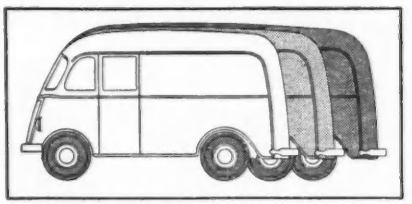
NEW—**The International KB-5-M with Metro* body . . . a bigger, more powerful model of the 11-year leader!**

More payload space!—this longer Metro body has 360 cubic feet of load space! Greater payload capacity, too!—the KB-5-M chassis is built for hauling requirements up to 12,000 pounds gross vehicle weight rating. More truck power!—the International Green Diamond 233 truck engine delivers 93 maximum brake h.p. at 3,400 r.p.m.!

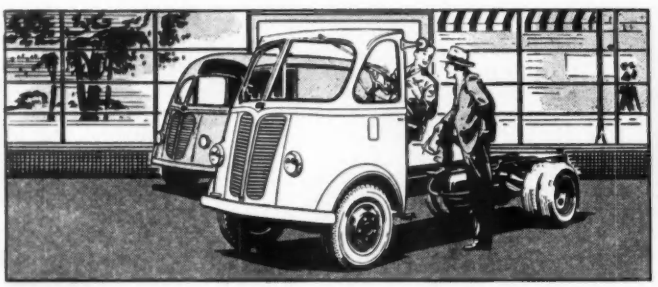
*Metro. Registered trade mark of The Metropolitan Body Company, Inc., subsidiary of the International Harvester Company.

NEW—**complete size range of Internationals with Metro bodies for efficient multi-stop delivery!**

All give you the basic Metro body advantages: (1) *Greater specialization*—body and chassis matched for efficient multi-stop delivery service! (2) *More efficient engineering*—interior area designed for maximum payload space and for easier loading and unloading by driver! (3) *Great maneuverability*—short bumper-to-bumper lengths for easy handling in urban traffic! (4) *Smart appearance*—advertises an alert business!

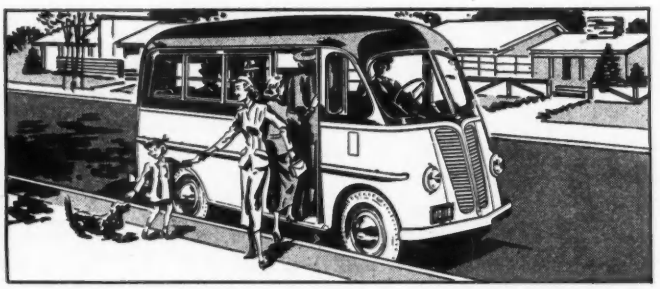


Above: relative sizes of 225, 280 and 360 cubic feet bodies



NEW—**International multi-stop chassis with complete Metro body front-end section!**

Includes windshield, front-quarter windows, dash, engine housing and driver's seat. With this unit your body builder can build your own highly specialized multi-stop delivery truck. You get the sturdy construction of an International Truck, you get the advantages of a Metro body front-end section. Three chassis available; wheelbases—102, 113 and 135 inches.



NEW—**International KB-3-M with Metro Coach body for low-cost bus transportation!**

Here's ideal low-cost passenger and school bus transportation for from 8 to 16 passengers! Extremely practical in urban areas, the all-steel Metro bodies matched with sturdy International KB-3-M chassis form a combination that will furnish economical bus transportation for years. Get the whole story from your International Truck Dealer or Branch.

International Harvester Builds McCormick Farm Equipment and Farmall Tractors
. . . Motor Trucks and Industrial Power . . . Refrigerators and Freezers

INTERNATIONAL TRUCKS

INTERNATIONAL HARVESTER COMPANY • CHICAGO



SURVEY NO. 13

Part 4

Fleets Report 155,000 Miles as Average Life of ENGINE BLOCKS

Range of reported mileages varies from 20,000 to 600,000 miles, with the majority of fleets well over the 100,000 mark. Average life of heads and head gaskets seems below possible maximum; other parts show about normal life

AS A GROUP, Retail Delivery and Truck & Bus Fleets show that it is possible to get over 90,000 miles service from governors. This is indicated in Table 1 by the average figures for those industries. The next best group performance is turned in by Food Distributors and Common Carriers. All other fleet group averages are below the national average, which is 65,640 miles.

Of course, there are individual fleets that do better than either their group or national averages. Some of these fleets report as high as 200,000 and 300,000 miles before their governors are replaced. These are excellent performance records. They certainly give other fleets a worthwhile goal.

Analysis **by A. W. GREENE,** *Managing Editor, Commercial Car Journal*



What is the Average Life of a Head Gasket?

Table 1

Individual fleets report from 15,000 to 150,000 miles but the national average is 39,315. Engine blocks average 155,188 miles, heads net 111,963

VOCATIONAL GROUPS	Total Number of Fleets Reporting	Number Fleets Reporting Average Replacement Mileage	GOVERNORS Mileage Range (Last 000 Omitted)	GOVERNORS Mileage Average	CYLINDER HEAD GASKET Mileage Range (Last 000 Omitted)	CYLINDER HEAD GASKET Mileage Average	ENGINE BLOCKS Mileage Range (Last 000 Omitted)	ENGINE BLOCKS Mileage Average	CYLINDER HEADS Mileage Range (Last 000 Omitted)	CYLINDER HEADS Mileage Average
FOR-HIRE CARRIER	33	25	10 – 200	68,529	10 – 150	42,522	70 – 600	221,471	20 – 400	130,882
FOOD DISTRIBUTION	54	28	10 – 300	70,263	15 – 100	41,458	60 – 500	182,969	50 – 250	143,333
GOVERNMENT	40	24	5 – 100	59,063	10 – 80	37,619	20 – 150	85,857	20 – 150	75,923
CONSTRUCTION AND MINING	7	3	40	40,000	16 – 30	24,500	60 – 150	105,000	50 – 100	70,000
INDUSTRIAL	11	7	20 – 100	60,000	10 – 50	35,417	80 – 100	90,000	90 – 150	113,333
PETROLEUM	14	9	17 – 100	51,750	30 – 60	42,939	80 – 350	225,000	75 – 200	107,000
PUBLIC UTILITY	38	22	5 – 100	47,944	15 – 60	35,833	20 – 100	70,000	35 – 100	68,571
RETAIL DELIVERY	22	14	25 – 200	92,200	10 – 50	30,077	75 – 200	107,143	25 – 125	78,125
TRUCK RENTAL	5	3	50	50,000	20 – 50	31,667	100	100,000	100 – 300	200,000
TRUCK AND BUS FLEETS, MIXED	11	8	48 – 100	93,600	60 – 100	76,250	60 – 300	174,167	30 – 300	150,833
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	235	143	5 – 300	65,640	15 – 150	39,315	20 – 600	155,188	20 – 400	111,963

FLEET OPERATORS' EXPERIENCE HANDBOOK

47 Parts Surveyed To Date

This is the last part of the current survey of the average life of engine parts. In this and the last three issues, performance information on a total of 47 different but related engine parts and its major accessories has been presented.

The series will continue with a survey of power train parts and other major parts of a truck until all have been covered.

Series Valuable Say Fleet Operators

This series has been suggested by CCJ's Board of Experts on the theory that a truck's life and performance is no better than the sum of its parts. Inasmuch as, to date, no information has been in existence, in an organized and related manner, on the average life of all truck parts, fleet operators are hailing this series as extremely valuable to the efficient and economical operation of their businesses.

Head Gaskets Average 39,315 Miles

INASMUCH as the average mileage for replacing valves and rings is approximately 52,000 miles, it would seem perfectly normal to replace head gaskets at the same mileage. However, that is not the practice. The average life of a head gasket is reported, in Table 1, to be 39,315 miles. This seems to indicate that the majority of fleets are experiencing such troubles as blowing of head gaskets, due to improperly torqued cylinder head bolts, and cooling system leakage.

The remedy, of course, is both obvious and simple. Properly tightened head bolts would net an average of 13,000 miles of additional life to the part.

Engine Blocks Average 155,000 Miles

AS A WHOLE, fleets are reporting good mileage for the life of engine blocks. Only three fleet groups show less than 100,000 miles per block. The national average is 155,188.

Common Carrier and Food Distribution fleets show some remarkably high mileage in their ranges; namely, 500,000 and 600,000 miles. With such outstanding performance in the top range, and with majority of fleets in 100,000-mile class, it is very difficult to rationalize poor mileage in the low range. The only possible conclusion to be drawn is that these fleets are experiencing a high incidence of freeze-ups and accidents.

In comparison with engine blocks, the average life of cylinder heads also seems a little low. Only two fleet groups, Truck Rental and Industrial, report mileages in excess of block life. The probability is that there is a close relationship of the reasons for this less-than-normal mileage with the reasons for the subnormal life of head gaskets.

The average life of parts shown in Table 2 is more nearly normal. The low mileage in the ranges of the Public Utility and Retail Delivery fleets for mufflers, tail pipes and exhaust pipes seems very unusual. But the overall averages for these and all other fleets do not appear to be too far out of line.

Composition of Vocational Groups as Used in the Accompanying Tables

FOR-HIRE CARRIER—Motor Freight Operators in Local and Over-the-Road Service.
FOOD DISTRIBUTION—Bakery, Dairy, and Other Food Products fleets.
GOVERNMENT—State, County, Municipal, and Federal fleets.
CONSTRUCTION AND MINING—Building, Mine, Quarry, and Gravel fleets.
INDUSTRIAL—Fleets operated by manufacturers.
PETROLEUM—Production and Distribution fleets.
PUBLIC UTILITY—Gas, Power, Water and Telephone fleets.
RETAIL DELIVERY—(Other than Food Products), Dry Cleaning, Laundry, Newspaper, Coal and Ice, Department Store, Beverage fleets.
TRUCK RENTAL—Agencies leasing motor trucks.
TRUCK AND BUS FLEETS, MIXED—Passenger carriers operating own truck fleets.

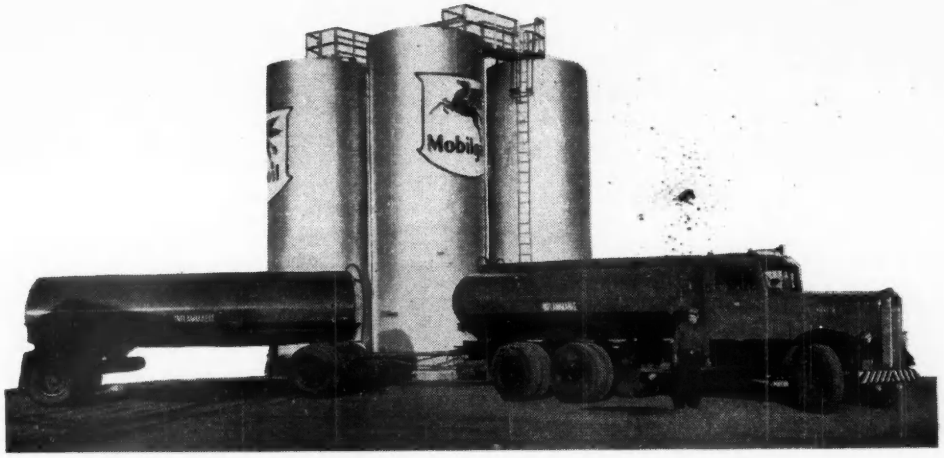


Mufflers, Tail Pipes Have Almost Similar Life

Table 2

Difference is 1200 miles, with 37,204 miles for muffers and 36,005 for tail pipes. Average life of manifolds almost double that of exhaust pipes

VOCATIONAL GROUPS	Total Number of Fleets Reporting	Number Fleets Reporting Average Replacement Mileage	MANIFOLDS Mileage		MUFFLERS Mileage		TAIL PIPES Mileage		EXHAUST PIPES Mileage	
			Range (Last 000 Omitted)	Average	Range (Last 000 Omitted)	Average	Range (Last 000 Omitted)	Average	Range (Last 000 Omitted)	Average
FOR-HIRE CARRIER	33	25	30 - 250	119,667	15 - 160	66,765	10 - 150	59,333	15 - 150	70,625
FOOD DISTRIBUTION	54	28	10 - 500	185,385	10 - 75	28,000	10 - 100	32,381	15 - 500	78,452
GOVERNMENT	40	24	10 - 150	65,778	9 - 48	25,350	9 - 48	22,381	15 - 100	41,438
CONSTRUCTION AND MINING	7	3	60 - 100	80,000	10 - 50	30,000	30 - 75	52,500	30 - 75	52,500
INDUSTRIAL	11	7	25 - 150	93,750	15 - 100	35,000	15 - 50	29,000	15 - 100	55,000
PETROLEUM	14	9	36 - 150	91,500	20 - 150	55,714	4 - 150	64,000	20 - 130	66,000
PUBLIC UTILITY	38	22	60 - 100	78,000	5 - 90	31,921	5 - 165	25,528	5 - 190	50,321
RETAIL DELIVERY	22	14	35 - 200	110,625	5 - 100	27,917	5 - 100	30,500	5 - 200	57,273
TRUCK RENTAL	5	3	100	100,000	20 - 40	27,333	20 - 40	31,667	50	50,000
TRUCK AND BUS FLEETS, MIXED	11	8	150 - 400	257,500	48 - 100	74,333	75 - 100	87,500	48 - 200	149,333
TOTAL AND AVERAGE ALL VOCATIONAL GROUPS	235	143	10 - 500	124,662	5 - 160	37,204	4 - 165	36,005	5 - 500	63,611



HIGH GLOSS on the "Flyin' Hoss" Lasts 4 Years



Meticulous preparation, high quality finish, frequent washing and polishing keep western petroleum fleet looking trim for about twice average finish life with maximum eye appeal



By Calvin T. Thomas
Manager, Automotive Equipment
General Petroleum Corporation
Los Angeles, Cal.

EDITOR'S NOTE: This is the first of a series of three articles describing maintenance operations and driver training methods of General Petroleum Corp., a Socony company. The procedures outlined in this article are confined to the equipment owned by General Petroleum. Indirect marketers, however, are strongly encouraged to maintain GP's standards.

FAMILIAR to millions of motorists from San Diego to Seattle and through the entire coastal area are the spotless bright red trucks of the General Petroleum marketing fleet. Including some 25 different types, the fleet currently numbers approximately 1000 pieces of automotive equipment. We think of each one as a travelling billboard for our company. For that reason, we make every effort to see that each maintains an appearance that will reflect credit to the company at all times. And we know from long experience that it is just good business to do so.

Paint Jobs Last 4 Years

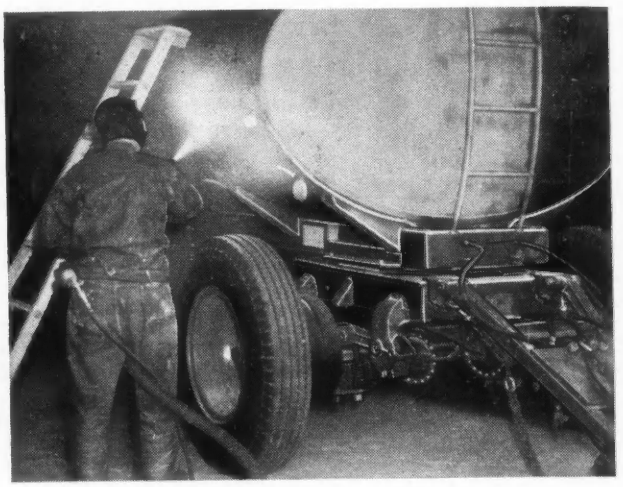
AT FIRST glance the cost involved appears high. But careful analysis shows that here, as in so many cases, an investment in good quality means the greatest economy in the long run. Our paint job, for example, costs about $300 per unit more on a typical piece of equipment than that used by most fleet operators. This approximately 100 per cent increase in cost is amply justified by the fact that the resulting job will last at least twice as long. Where ordinarily a repaint would be necessary at the end of 2 years, our paint job lasts about 4 years on the average.

Essentially, it is our practice to start with the best equipment obtainable, and to keep it in perfect condition throughout its life. The painting and preparation procedure calls for the use of our own finishes and other materials developed by the Socony Paint Products Co.

(TURN TO NEXT PAGE, PLEASE)

HIGH GLOSS on the "Flyin' Hoss" . . .

Continued from Page 67



Sandblasting operation for removing "mill scale" off metal body to prepare it for painting. Average time: 3 hours. Average cost: $30 per body



Sign painter, Ed Lawrence, prepares Mobilgas lettering with "mud," prior to masking of letters for black border

New Metal Surfaces Sandblasted

SURFACE preparation begins by stripping down the chrome plating. Fenders, skirting and other metal areas are then prepared by removing dents and repairing other surface irregularities. New metal surfaces are sandblasted, as are any areas where undercoat failure is indicated by checking or peeling, or by rust "bubbling" through.

Before priming, masking tape is applied to all surfaces that require protection from painting. Two coats of primer surfacer are then applied and allowed to dry overnight. This surfacer is thinned with a synthetic reducer at the rate of approximately one pint to one gallon.

The following day, glazing putty is applied with a putty knife to correct any irregular surface condition. The putty is not used as a substitute for "leading-in" but, rather, for such purposes as filling cracks or irregularities in welds and for sealing metal seams. Glazed portions are sanded the following day with No. 240 paper, wet or dry, before applying the next coat of surfacer. This is followed by one or two additional coats.

A light coat of white lacquer or white oil paint is then applied to serve as a rub-down guide coat. This may be applied almost immediately following the surfacer, and serves merely to identify rubbed-down areas during the rubbing-down operation.

The chassis is prepared by applying one coat of surfacer, thinned approximately one pint to one gallon. After drying overnight, two coats of Enamel, thinned approximately one pint to one gallon, are applied. 15 minutes is allowed between coats.

This treatment is used not only on the undercarriage but also for underside of the tank, inside the skirting. Chassis treatment is completed before water-sanding the top sections to prevent rusting. The cab and meter box are painted the same as the chassis except with grey enamel. Factory-painted new cabs are not painted inside until the vehicle requires a second paint job.

The entire surface given the guide coat is then water-sanded using No. 280 paper and allowed to dry overnight.

Lacquer Mask Used on Signs

SIGNS areas are covered with two coats of black and allowed to dry overnight. Lacquer mask is applied to the outline of the sign, and two coats of white to the sign area. After drying overnight, the entire sign area is covered with lacquer mask. Two



Typical "Clipper" truck of 5200-gal capacity. Combination illustrated at top of Page 67 shows new type two-axle, frameless trailer which permits installation of dry cargo compartment in mid section



Washer Murdock gives vehicle a high pressure shampoo. Dual valve in gun permits fresh water rinse after wash

coats of white to the sign area. After truck and allowed to dry overnight. The lacquer mask is washed off with water then the truck is polished.

Touch-up or repaint follows the same procedure as for new paint.

Paint Shop Equipment

OUR procedure is built around regular paint shop equipment, including a paint spray booth with water-wash exhaust system. Size of the booth varies with type of equipment handled. Air circulation is governed by the booth exhaust and intake through a special door having a fiber glass dust stop screen. The screen is prepared in sections and covers the entire front door, or 90 per cent of the front wall surface of the shop. All air entering the room must pass through this filter.

Spray equipment includes guns and a 5-gal pressure feed tank. Air, brought from our steam plant, goes through a oil-and-moisture separator before entering the system.

Outside Facilities Also Used

GENERAL Petroleum owns and operates one of the finest and best equipped paint shops in the West. This plant is located in Los Angeles and handles about one-third of our equipment. In addition, there are 15 other paint shops under contract to service the balance of our trucks under close supervision of our own personnel.

All of our marketing equipment must meet exacting appearance standards with particular emphasis on colors, lettering and body finish. The recognized standard is preserved in the form of 8x10 Kodachromes showing a typical piece of equipment in true color. These are taken into the field, where necessary, to further emphasize our truck housekeeping standard.

(TURN TO PAGE 112, PLEASE)

By George R. Archdeacon
Blackpool, England

EDITOR'S NOTE: The London Transport Executive is one of a number of administrative bodies set up under Great Britain's Transport Act of 1947 to operate the nation's freight and passenger transportation facilities in an efficient, adequate, and economical manner, and to extend and improve the system. The methods outlined in this article are those currently employed to achieve the British Transport Commission's objectives.



ABOVE illustration shows the large cleaning and degreasing units used in the Chiswick Works. Caustic soda solution is sprayed on bus parts on conveyor. Next step is inspection

Mass Production Maintenance for

WORLD'S LARGEST BUS

Buses are disassembled on a moving platform, all parts and chassis are reconditioned,

THE LONDON TRANSPORT EXECUTIVE, London, England, has organized the repair and maintenance of its 7100-bus fleet on a mass production basis.

It will be obvious that a fleet of that size will provide a fairly constant load for a very large maintenance plant, even if only preventive maintenance is visualized. When to this are added overhauls, repairs, breakdowns and accidents, the load on the shop will be as constant as in an automotive production plant.

Major Repairs Centralized

ALL major repair work is handled in a large, modern, functional-type building known as the Chiswick Works. All unit overhaul and general repair is fed to this plant by the operating garages throughout the London area. This central plant also serves as headquarters for the fleet's engineering organization, which coordinates technical development and maintenance methods, and as the central source for all parts and supplies.

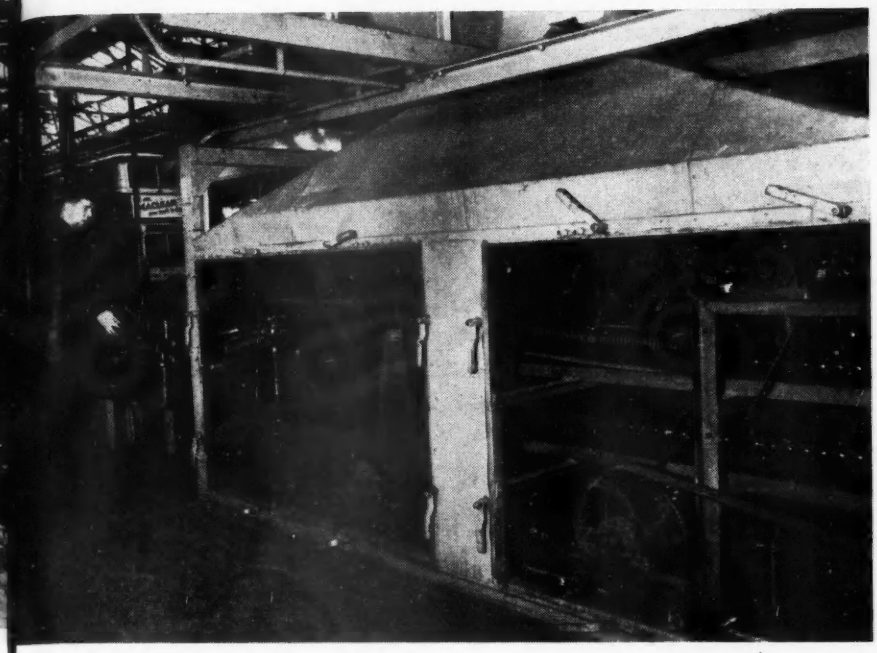
The Chiswick Works covers 31 acres, of which 15 acres are occupied by the maintenance buildings. It is located in the western part of London, known as the Chiswick District. The average number employed in this plant is 5,000, comprising every class of worker and every type of skilled trade known to the motor transport industry.

To simplify maintenance and storekeeping, the London Transport Executive has restricted its buses to six types. This form of standardization permits the layout of the various departments, equipment and processes for mass production methods.

The necessary standard of interchangeability has been attained by the engineering department's close study of tolerances and equipment to handle all necessary work. A set of checking fixtures has been provided for the chassis and principal parts of the six types of bus bodies.

Seven Major Repair Departments

ALL repair work in this plant is divided into seven distinct depart-



Basic Statistics

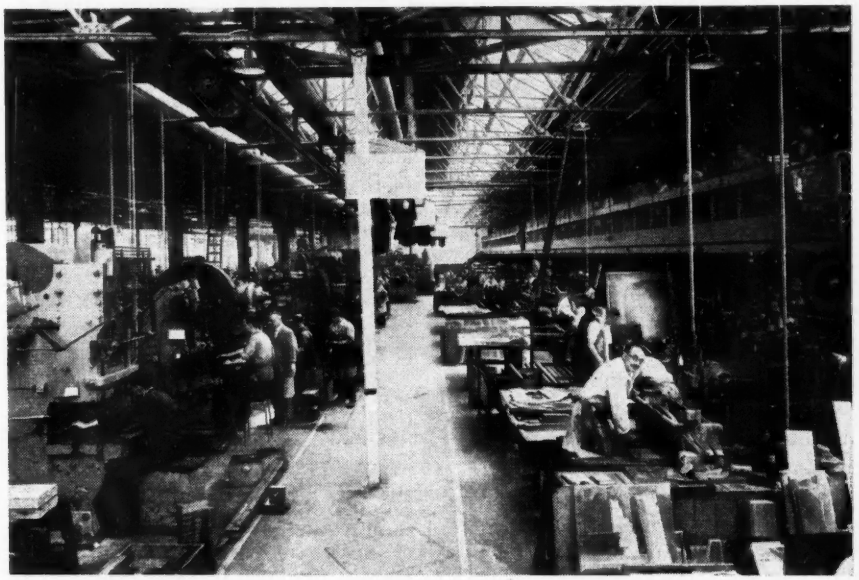
The following facts will give some idea of the extent of the operations.

Capital Expenditure	$775,000,000(approx.)
Area served	2,000 Sq miles
Population served	9,700,000
R. R. stations served	278
R. R. passenger cars	3800
Mileage covered by road services	3000
Number of buses	7100
Number of trams and trolley buses	2600
Mileage by road services and rail vehicles	610,000,000
Daily consumption of gasoline and fuel oil	102,000 gal
Daily consumption of coal	1800 tons (long)
Passengers carried— Annually	4,260,000,000
Daily	12,000,000
Number of employees	97,000

RIGHT. Upholstery is cleaned in two stages. Dust is mechanically pummelled and extracted by suction fan in this unit. Next step is dry cleaning

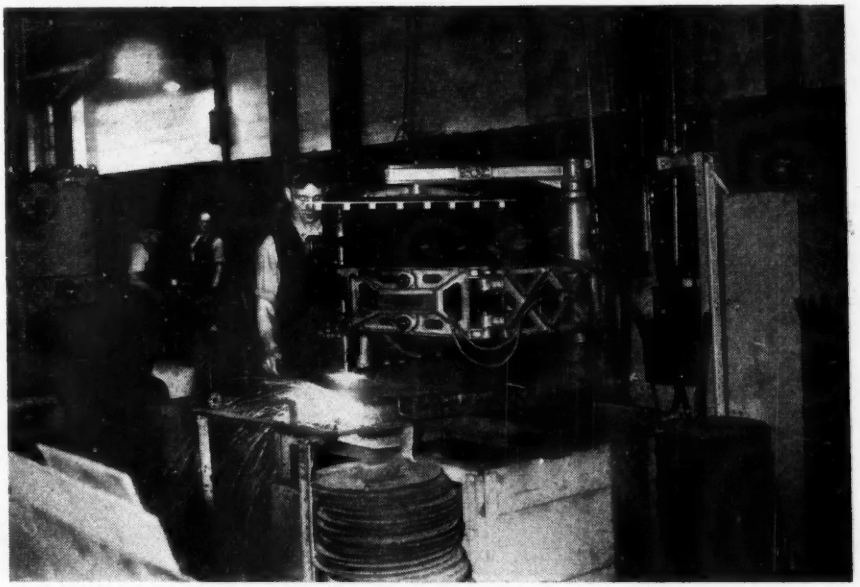
CENTER. Metal panel shop, where body sections, trim and other parts are fabricated by mass production

BOTTOM. Closeup of flame cut profiling turning out odd-shaped sections



FLEET

then reassembled



ments, not counting the Cost and Accounts Department which is a part of the Central Accounting Division.

DESIGN AND DEVELOPMENT DEPARTMENT—The duties of this department comprise all technical problems falling within the general category of automotive engineering.

PRODUCTION DEPARTMENT — This department is responsible for executing all work involved in the overhaul and repair of the rolling stock.

INSPECTION DEPARTMENT — This department is responsible for the

(TURN TO PAGE 108, PLEASE)

Shop hints from FLEET

1. Wheel Puller

by Lorain E. Clemans
Wagners Service, Inc.
Springfield, Ohio

Here is a wheel puller I made from scrap channel iron and some casters. It will remove duals without manual lifting and has proven a labor saver with brake and wheel bearing jobs.

The wheel rest is made from 8-in. channel iron 28 in. long. A cross piece of 5-in. channel 27 in. long is welded across one end of this base. Rear uprights are of 1¾-in. angle iron 25 in. long, welded to the wheel rest and braced with a piece of angle iron at top and bottom. Top cross piece is made from 1-in. strap iron 30 in. long, which is welded to the upright. The handle is bent out of ½-in. cold rolled steel, and mounted on a swivel hook at the base.

Two-in. casters are mounted to the bottom of the base for maneuverability. The puller is slid under the wheels and the truck is lowered so that tires rest on the base. Assembly can be slid out without much effort.

2. Creeper Rollers

by William Loos
Detroit, Mich.

We made up some creeper casters from ball bearings and find them much easier to roll and easier to handle.

Take a Ford transmission bearing and fit a piece of cold rolled steel plate into the center as shown. Drill a hole in the center of this piece and mount to the regular caster yoke with a ¼-in. bolt or rivet.

We also use this type caster mounted on mechanics' heavy tool boxes. They must be cleaned and oiled regularly, but roll better than regular casters.

Editor's Note: The July hint of the month carried a statement phrased as follows: "After struggling with many a stubborn tire and Budd wheel we devised a tire bead breaking tool . . ." It should be noted that Mr. Williams is referring to the pressed steel wheel developed originally by Budd Co., but made and used now by many other manufacturers.

3. Brake Drum Bolt Change

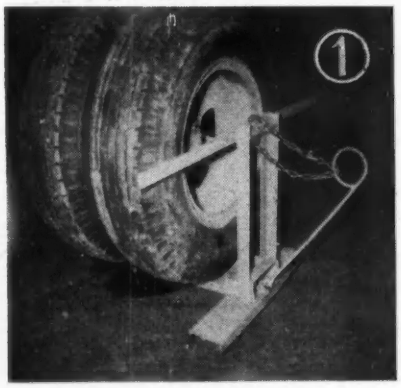
by Ray Crider
Ward Trucking Corp.
Altoona, Penna.

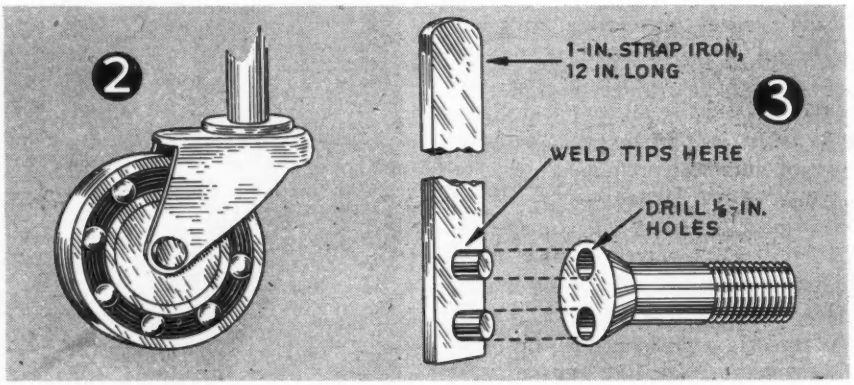
I drilled the head of the BK drum bolts on International K11 trucks with a ¼-in. drill, ⅛ in. from the outside edge of the head as shown. Then I made a tool out of a tire iron by welding ¼-in. tips on the end to correspond to the holes in the bolt head. This tool is used to hold the bolts from turning when changing drums.

4. Creeper Head Rest

by Henry Mikulecky
Washington Coop. Creamery
Linn, Kan.

The floor creepers we bought came without head rests, so we built them with 2½-in. radiator hose cut in 12-in. sections and clamped to the head of the creeper with regular hose clamp straps. This provides a soft head cushion and makes for more comfortable working conditions.





$25 FOR THE BEST HINT PUBLISHED EACH MONTH • • •

$5 FOR ALL HINTS PUBLISHED EACH MONTH

SHOPS

INFORMATION, PLEASE

We need your help. Other mechanics need your service tip or improved tool. Do you need some ready cash? Now is the time and here is the place to put that shop hint to work for others. Let's get more good, practical, time-saving suggestions on these pages to help the whole truck maintenance field. Jot it, plot it—and you've got it. When shall we expect your contribution?

5. Jack Safety Jig

by Roland Brunette
Chair City Motor Express Co.
Sheboygan, Wis.

Here is a safety device we use on our floor jacks when we want to raise a truck to the maximum height of the jack and leave it for awhile. This prop is made from a 1¼-in. stock cut to the length required. One-inch square plates are welded to the ends as shown so that the bar will fit between the saddle and the axle when raised. This makes it impossible for the jack to come down.

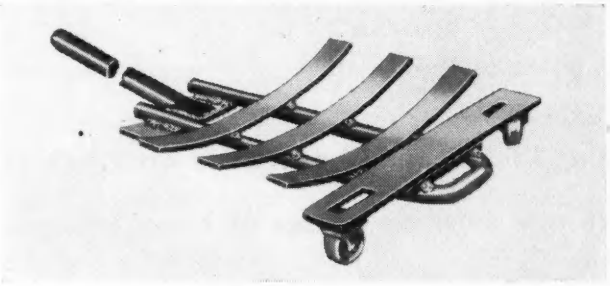
6. Frozen Grease Fittings

by Clinton B. Baker
State Roads Commission
Easton, Md.

Every mechanic has encountered frozen grease fittings at times. Here is an easy way to loosen them.

Remove fitting and fill opening with a nut loosener fluid. Reinstall the fitting and apply grease gun. After a little time any fitting will break through.

$25 Hint of the Month ★

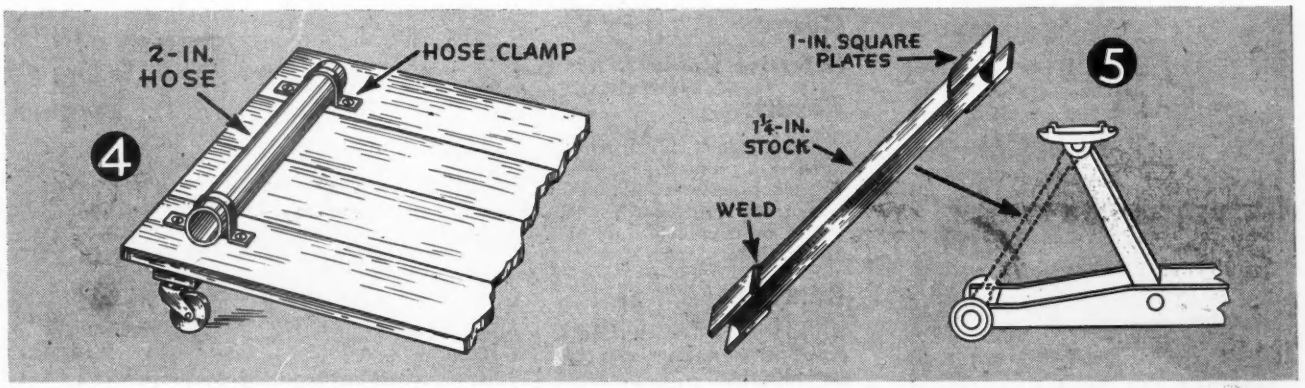


Wheel Lifter

by George Favinger
State Roads Commission
Easton, Md.

This wheel lifter has proved itself in our shops when mounting and dismounting heavy truck tires and wheels. It saves time and hard work.

Three strap irons 12 in. long are curved to the contour of the tire and welded to a heavy-duty U-bolt at 2-in. intervals. A 3-ft. handle is welded to the base, and two creeper rollers are mounted to the base so the unit can be moved to any position.





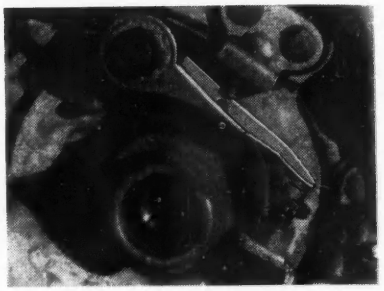
MURDER
In the Fleet Field
. . . . the Victims

DISTRIBUTOR

Engine life is snuffed out when distributors fail. Here are common causes of these killings. Arm yourself with this diagnosis and prepare for war

While it is impossible to portray all causes of distributor failures, and again difficult to illustrate exactly how each failure will appear, these photographs of actual breakdowns will show what to look for in general, how to diagnose causes and how to cut potential defects. This story should remind mechanics to double check adjustments, to make timely inspections, to use care in installing and removing assemblies. It should remind operators that only reliable parts installed correctly and replaced periodically will keep vehicles running smoothly and economically.

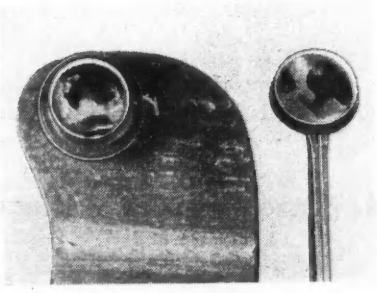
Cause:
Point Misalignment



Result:
Points may be cocked or sprung so that gap width is inaccurate. Rubbing block may not meet cam over entire surface so that premature wear and faulty operation is experienced.

Remedy:
Use proper size points for unit. Align moving arm with point tool when they are installed. Check cam angle on a meter when job is completed.

Cause:
Over-Capacity Condenser



Result:
Metal build up on the negative point, in this case the stationary side.

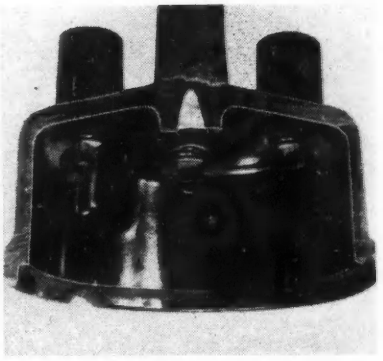
Remedy:
Install a lower capacity condenser. Move distributor coil low and high tension leads closer together, or move these leads further from a ground, or lengthen the condenser leads to provide less capacity condenser.



Cause:
Defective Rotor *(left)*

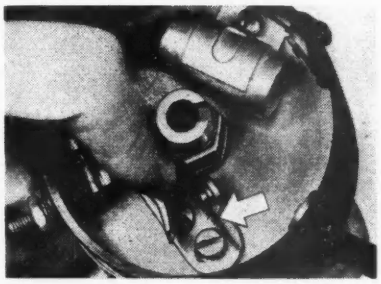
Result:
Rubbing block in distributor cap has worn to a point where rotor brush rubs on metal surface, developing excessive heat from friction. Result is overheating of rotor contact, loss of tension and final fatigue.

Remedy:
Replace defective distributor caps and rotors as wear develops. Clean surfaces periodically.



Cause:

Crankcase vapors



Result:

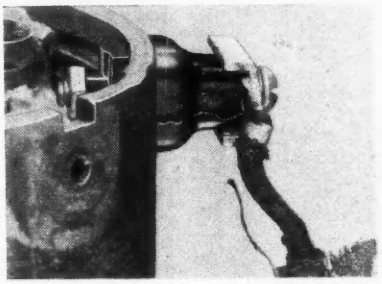
Points and breaker plates are coated with oil and dirt accumulation. Corrosion may develop on contacts and arm. Arcing and burning results.

Remedy:

Keep crankcase breather clean and unrestricted. Recondition engine to cut blow-by. Drain oil periodically to keep down water vapors. Clean distributor frequently with carbon tet or solvent.

Cause:

Defective Primary Wires



Result:

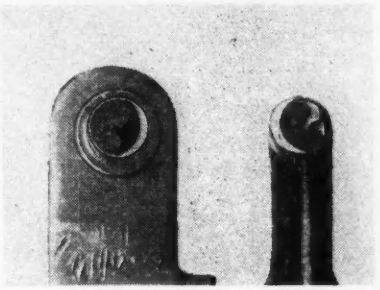
Leads are frayed, insulation block is cracked, and primary circuit may become shorted, resulting in hard starting, misfiring or failure to operate entirely.

Remedy:

Replace all wiring showing evidence of leakage or breaks. Pulling connections down too tightly may break insulating blocks or strip threads. Use proper tools for the job.

Cause:

Under-Capacity Condenser



Result:

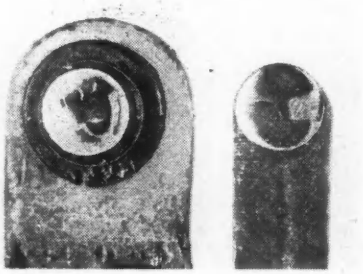
Metal build up on positive point, in this case the movable arm.

Remedy:

Install a heavy-duty condenser, or separate the distributor to ignition coil low and high tension leads, or move leads closer to a ground. Sometimes the condenser lead can be shortened to provide more capacity. Coil primary lead may be connected directly to the condenser.

Cause:

Improper Point Conditioning



Result:

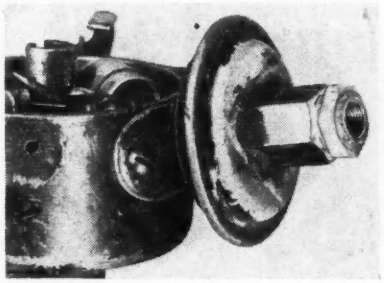
Contact file has not been held at proper position. One edge of contacts has been filed away. Surface is rough and will be subject to burning.

Remedy:

Replace points when wear or pitting is evident. Manufacturers do not recommend filing points. Contact file may only restore surface as a temporary expedient.

Cause:

Defective Vacuum Advance



Result:

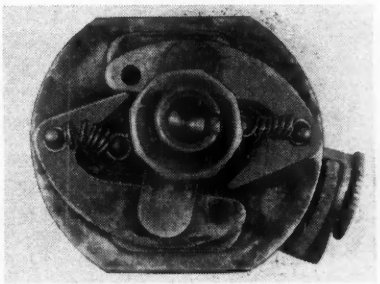
Spark will fail to advance at the point where engine vacuum should pull diaphragm forward. Sluggish operation, poor pick up will be evidenced.

Remedy:

Subject vacuum advance unit to vacuum test to check for diaphragm leaks. If unit is faulty, replace as overhaul is not practical in most shops.

Cause:

Defective Mechanical Advance



Result:

Spark will fail to advance with increased engine rpm as distributor plate will not be thrown forward with engine speed. Weak springs, worn pins, corroded or dirty parts in plate may be noted.

Remedy:

Replace advance mechanism springs, clean parts with solvent and check for operation on tester.

Cause:

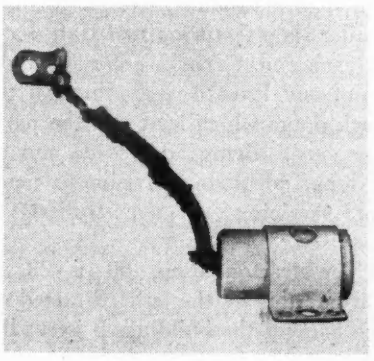
Normal Wear ***(left)***

Result:

Corroded distributor cap contacts will impair efficiency by weakening high tension spark. Corrosion acts as insulation and will result in poor starting, possible missing, high fuel consumption and inefficient engine operation.

Remedy:

Replace distributor cap when corrosion reaches this point. Cleaning with sandpaper will effect only a temporary cure.



Cause:

Careless Servicing ***(left)***

Result:

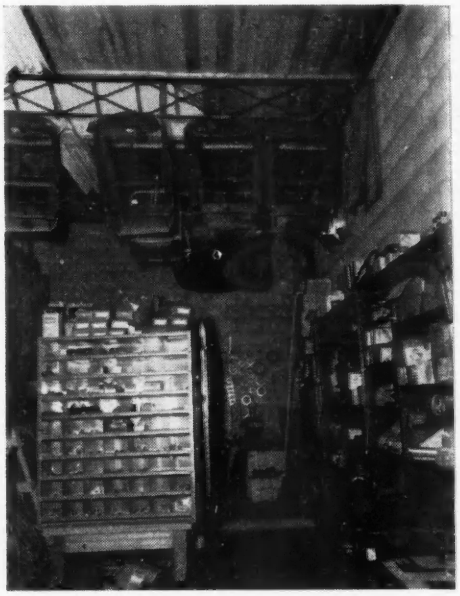
Condenser pigtail has been damaged through careless handling in service. However, overheated engines may cause heat checking of wiring insulation and eventual failure.

Remedy:

Replace condenser when wires show fraying or cracked insulation. Check other wires for evidence of this condition.

(TURN TO PAGE 138, PLEASE)





LEFT. The tractor shop designed with five stalls and doorways opening directly into each one. Fluorescent lights, overhead heaters, skylights and ventilators make for pleasant working conditions. RIGHT. Parts room, where engine overhaul is performed and rebuilt engines stocked

Planned PM in NEW SHOP PLAN

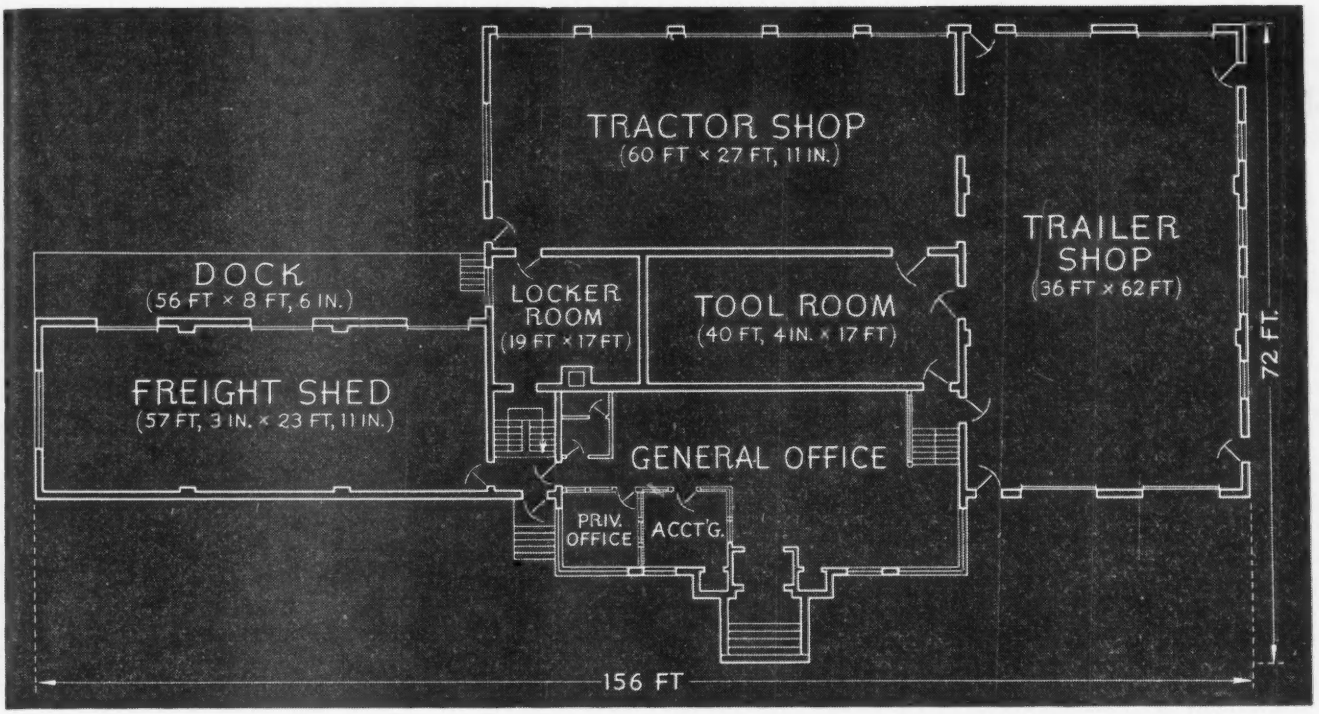
Terminal and garage, 156 x 72 ft., incorporates the latest ideas in layout, service

EARLY this year we moved our fleet maintenance and terminal activities into a new garage especially designed to meet our needs. After eight months of operation in this carefully-designed, fully-equipped shop we can show definite improvements in operating economy, reduction of road calls and vastly improved shop personnel morale. A newly overhauled PM program, made possible through these increased facilities, has enabled us to keep better track of equipment and to keep them in tip-top mechanical condition.

The new terminal and garage measures 156 x 72 ft, being built on a property 400 x 300 ft. It is composed of a two-lane, straight-through trailer shop featuring two 10-ft doors at each end. Trucks enter from the front and leave directly through the back doors which lead into the parking yard. Being 36 ft wide and 62 ft long, adequate provision is made for servicing all our trailers as required.

The tractor shop, 60 x 28 ft, borders this on the left. Situated on the back of the building, it is readily accessible to the parking yard. A double door for vehicles and a small door for personnel facilitate intershop movement. The tool room is located in the center of the building so that it is convenient to tractor and trailer shop as well as the general office in the front. Just off this on the left is a 19 x 17-ft locker room equipped with toilet facilities, shower and lockers for shop personnel.

A private office and an accounting office are set just off the general office and convenient to the entrance as well as the freight shed. The freight





TOP. Modern layout features trailer shop on right, tractor shop in rear, parts dept., center, dock on left

ABOVE. Building is of brick construction, designed to please the eye. Cost including ground ran $100,000

facilities and equipment for an 83-vehicle fleet

By J. P. Foohey
Vice President, Shop Superintendent
The Transport Motor Express, Inc.
Fort Wayne, Ind.

shed, measuring 57 x 23 ft is located at the extreme left. Docking facilities just behind this provide space for loading and unloading eight semis at one time. Located adjacent to the trailer yard, the dock is convenient for trucks to move in and around the yard when unloaded.

Within these walls we are able to service efficiently our 35 White tractors and 48 semi-trailers, keeping them in first class shape and free from potential road failures. Nine trained mechanics specializing in various phases of the work maintain 24-hour service for our rolling stock.

The building itself is of brick construction, heated throughout by steam with an automatic oil-burning unit. The forced air heaters are mounted well above work areas to provide comfortable temperatures year round. The general office and the private offices are equipped with such improvements as acoustical ceilings, fluorescent lighting, asphalt tile flooring and glare-proof desks. This modern structure, with the land, represents an investment of $100,000.

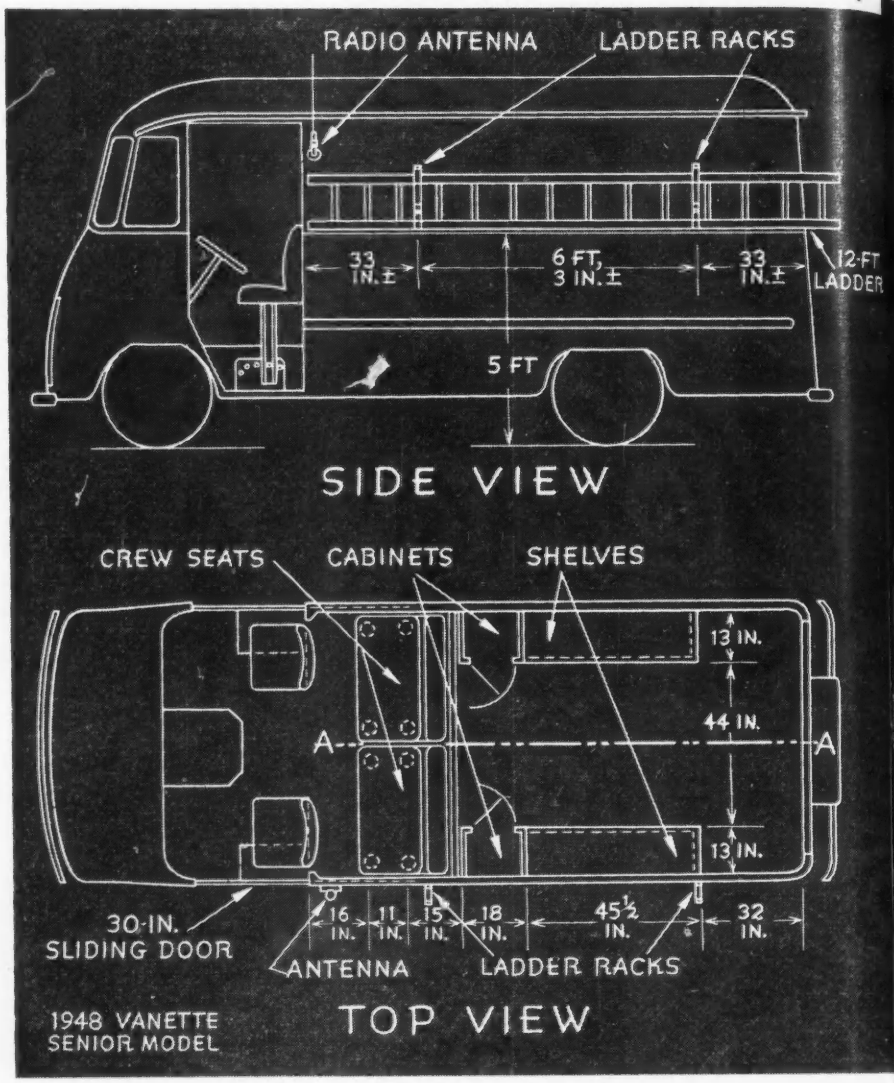
(TURN TO PAGE 134, PLEASE)



Company truck enters front door

Utility Adopts LIGHT VANS for

By A. Driscoll
Superintendent of Transportation
Atlantic City Electric Co.,
Atlantic City, N. J.





WE HAVE ACHIEVED a new high in efficiency afield by substituting van-type trucks for the typical utility service vehicles generally used for underground cable network and other service. This is a major departure, but we have found many advantages.

The smooth lines present a much nicer appearance. They are lighter in weight and have a shorter wheelbase, making them easier to handle.

From the job efficiency angle, we have more working room inside the body than in our old vehicles, despite the fact that the old ones had a longer wheelbase. This is due to larger interiors and the possibility of doing more with them.

Crews and Drivers Pleased

THE crews and drivers like them much better than the trucks they replaced because they have comfortable seating for the crew and are easier riding. The crew compartment is apart from the equipment carried, and it is free from the usual litter of tools and equipment. Both hot and cold weather comfort is equal to the driver's, which is an improvement over the type of old equipment replaced.



FIG. 4. Above illustrations show a light van used as field Doble Testing Laboratory by eastern public utility

In Service Over a Year

THE first of our vans was placed in service over a year ago. That and the others have proved their worth beyond doubt. We have several different makes in use and find them equally satisfactory. The two shown in the accompanying illustrations are: Vanette Senior, F3, with a 122-in. wheelbase and 7800-lb gvw; Metro, KB3, with a 113-in. wheelbase and 7000-lb gvw. The vehicles they replaced were of 116- and 134-in. wheelbase, and 4600- and 12,500-lb gvw.

The smallest space inside the vans, the Vanette, measures 138 x 70 in., 380 cu ft, whereas the largest space in the old vehicle was 107 x 56 in.,

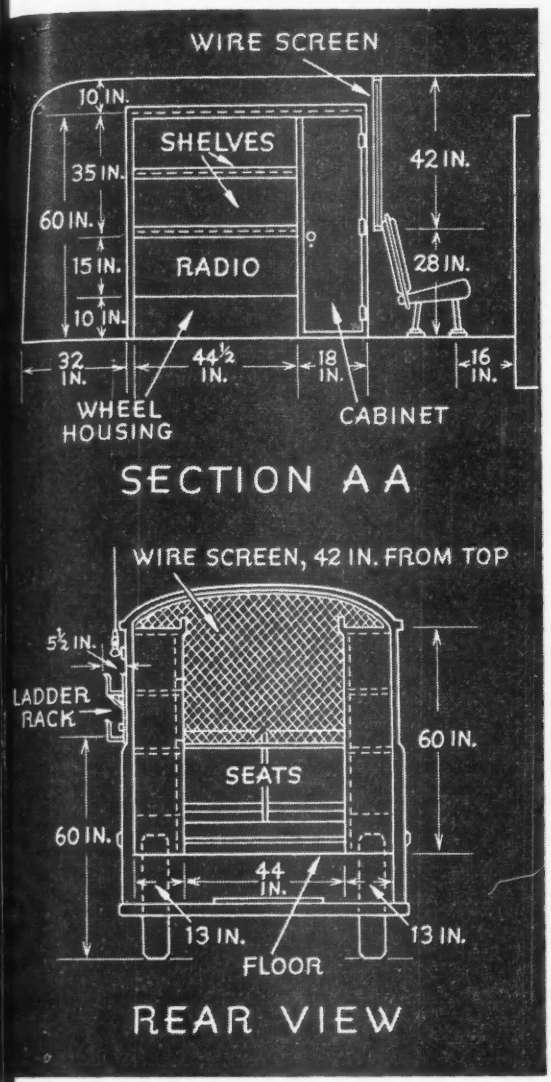
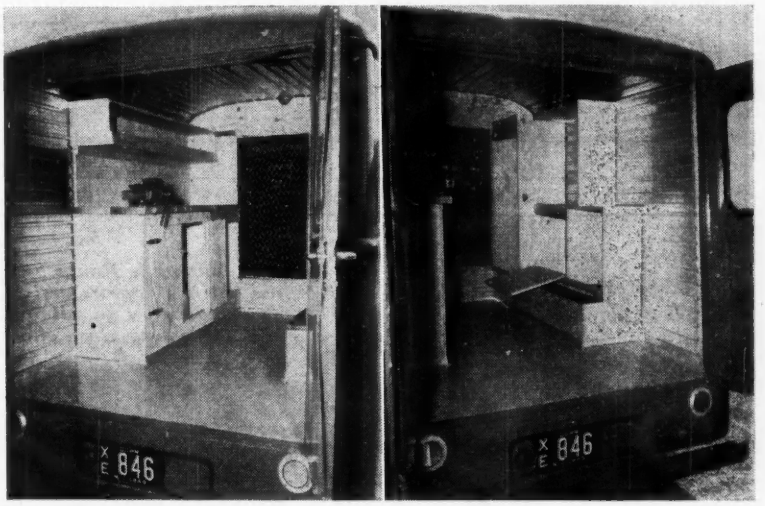


FIG. 1. Reproduction of a blueprint showing construction details of shelves, cabinets and crew seats in vans used by Atlantic City Electric Co.'s Underground Department in F3 Vanette



FIG. 2. Adequate, comfortable quarters for crew behind driver is unencumbered and holds five men

FIG. 3. Views below show the workbench, shelves and cabinets just after installation. Headroom is ample for men of average height. Adequate lighting aids night work. Screen in back partitions crew section



FIELD SERVICE

Experiment with retail delivery vans boosts job efficiency, provides good crew comfort with adequate capacity

280 cu ft. The 5-ft, 10-in. headroom in the Vanette, while insufficient for a tall man to stand erect, is about 14 in. greater than that of our old vehicles and easily accommodates anyone of medium height. Headroom is important, as the men are required at times to work inside the vehicles.

A small but useful feature is the lighting in the interior of the van. Our service departments are obliged at times to do night work, and fixed lights of proper wattage are used.

Interior Layouts Differ

THE arrangement inside the vans differs according to the department using the vehicle. Construction details of the interior of the vans used by the Hot Water Heating Department is shown in Fig. 1. Figs. 2 and 3 show the cabinets and workbench just after installation.

Another interior arrangement is shown in Fig. 4. This vehicle is used as a field Doble Testing Laboratory. Here no special construction, such as shelves, bins or workbench, is employed. The only exception, perhaps, is the mounting of the power factor testing equipment which, being delicate, must be protected from severe rough road shocks. This is mounted on rubber, and the 110-

(TURN TO PAGE 126, PLEASE)

YELLOW TRANSIT CO.,
Oklahoma City, Oklahoma

Month of: _____ 19__

CHARACTER OF THE ACCIDENT

MOVEMENT OF YOUR VEHICLE	COLLISION							SIDESWIPE			MISCELLANEOUS			TOTAL
	R. angle from left	R. angle from right	Head to Head	Ran into Vehicle	Struck in rear by other Veh.	Stationary Object	Ran into pedestrian	Overtaking other vehicle	being Overtaken	Moving Opposite direction	Ran Off Roadway	Upset on Roadway	Other (Describe)	
Turning right														
Turning left														
Making U-turn														
Straight thru Intersection														
Straight ahead no intersection On level														
Going up hill														
Going down hill														
Starting from curb														
Starting in traffic lane														
Standing in traffic lane														
Parked														
Backing														
TOTAL														

ROUTE SLIP

Report entered on Map ☐ Report entered on Driver Record ☐

Report entered on ATA Report ☐ Points Deducted ☐

Report entered in Acc. Book ☐ Chargeable ☐ Non-Chargeable ☐

City ☐ Charged to _____ Division

Road Drivers in City _____ ☐ Total Division to date _____

Highway ☐

Board Action Required _____ Board Action: Chargeable ☐ Not Chargeable ☐

FIG. 1 (inset) is Route Slip, 3x7 in. When accident report arrives, slip insures its delivery to all departments providing close check

FIG. 2 (above) is the ATA Monthly Report on which all accidents are listed and data used to make up Truck Accident Summary Bulletins

Accident Analysis

Flags Fleet's Mishap Rate

AFTER computing our accident rate following a typical recent month's operation, the figure of 1.52 accidents per 100,000 miles came up. We have done better than this, but we have also done worse. We think, however, that anything above two accidents per 100,000 miles is a poor showing.

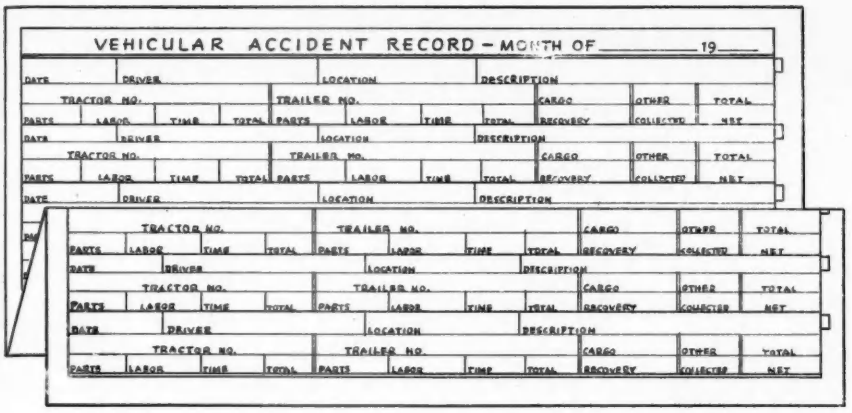
That figure covers all accidents involving vehicles, no matter how minor and whether or not they are chargeable to our drivers. I wonder how many pleasure vehicles showing a 100,000-mile operation have been free of accidents.

We are working more extensively on safety today than ever before, spending approximately $25,000 yearly on what might be called extra precautionary safety efforts, and we think the capital outlay is well justified.

About 70 per cent of my own time as an executive is occupied with safety matters; two of our office employees spend an appreciable amount of their time in compiling accident statistics. Although we might assume that our equipment is mechanically perfect, we would still feel our job at working at safety just at its beginning.

Accident Data Studied

OUR system consists of compiling comprehensive information about every accident, and subsequent arrangement of such information into



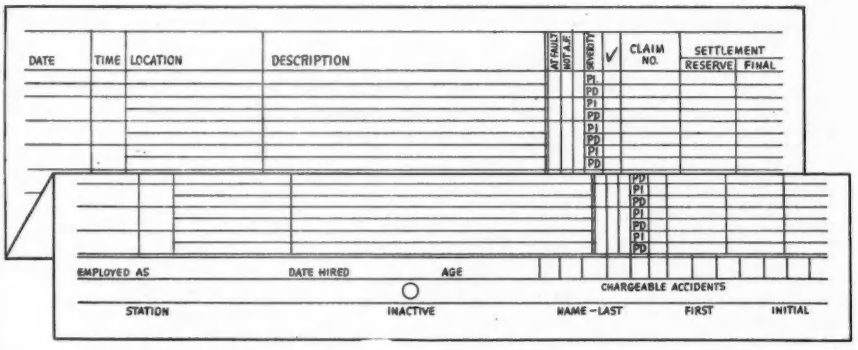


FIG. 3 (top) lists accident detail of location, cargo loss, repairing costs and other pertinent data for chronological Accident Record Book

FIG. 4 (above) Individual Drivers' Record shows accident dates, time, responsibility, severity of mishap as well as insurance claim number



By Evans G. Nash

Personnel and Safety Director
Yellow Transit Co., Oklahoma City

Yellow Transit drops accident rate to 1.52 per 100,000 miles through careful study of reports; spends $25,000 annually on safety aids; stresses driver selection and training

patterns which allow us to visualize over-all safety problems. Without this backlog of accident data, we would feel poorly equipped to study today's safety problems.

Our safety system in its entirety falls in three sections: selection and training of personnel, maintenance of equipment, which has been related in a former issue of COMMERCIAL CAR JOURNAL, and our safety program proper.

Considering the extraordinary care we employ in choosing driver personnel, it might be erroneously assumed that no further safety efforts applying to drivers are necessary. Nevertheless, as every operator knows, those drivers which have been chosen with so much care are going to be involved in accidents.

So far the most effective instruments with which we have found to work are accident reports themselves. The accident reports, individually and collectively, are the foundation on which we think we are making some headway in building the safety structure.

Routing of Reports

THE utilization of accident information in promoting future safety begins of course with receipt of the accident report, which is written on a form furnished by the company's insurance carrier. A copy is sent to the division superintendent affected as well as to the general office, safety section.

Upon receipt in the general office, each report is routed by means of a route slip (Fig. 1) attached to it, thus insuring the report will reach all departments involved. But even before the route slip is attached, accidents are "spotted" on operational wall maps by means of pins, different types of pins designating different types of accidents. This furnishes visual evidence of the record and facilitates the plotting of danger zones.

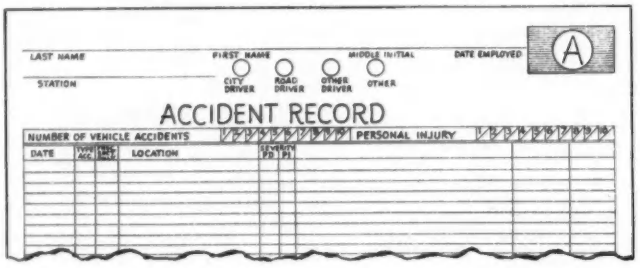
Certain other statistical data, such as location by city or rural section, the division to be charged and whether or not board action if required are collected on the route slip. Board action is required in virtually all cases except backing accidents.

Next, accidents are entered on the ATA monthly report (Form 2), entered in the accident record book (Form 3), and on the individual drivers' record (Form 4).

(TURN TO NEXT PAGE, PLEASE)

Accident Analysis . . .

Continued from Page 81



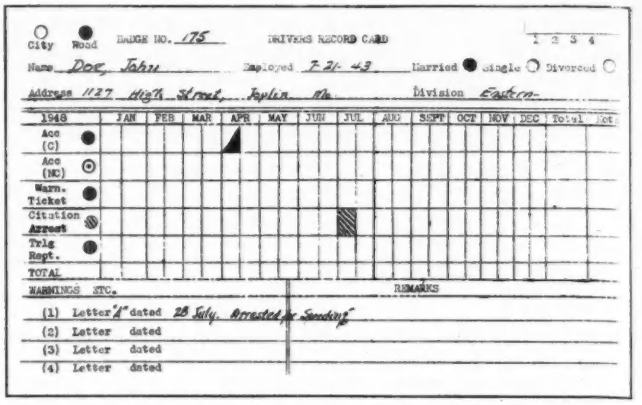


FIG. 5 (above) is the Driver's Record Card, 8x5 in., which shows merits and demerits as well as nature of action taken. Three offenses may lead to discharge

FIG. 6 (left), Driver's Accident Record, is filed with man's personnel record data to provide speedy access to driver performance information on a minute's notice

Board Action

WHERE board action is required, copies of the reports of accident and a diagram are sent to members of the board for their vote. The accident review board for road drivers consists of a road driver from each of the five major driver "break" points, the division superintendent in whose division the accident occurred and the chief of the personnel and safety section of the general office. The review board for accidents involving city drivers consists of a city driver from each of the major terminals in each division, the terminal manager in whose city the accident occurred and the chief of the personnel and safety section, general office.

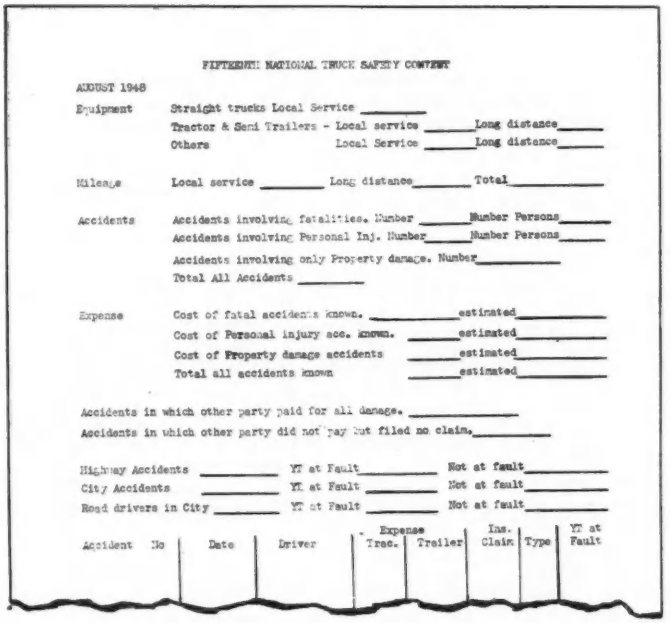
The accident record book shows the accidents in chronological order, including the name of the driver, location, a description of the accident, the vehicle number, company repair costs, cargo loss, any recovery or collection and the total cost and net cost.

The individual driver's record book contains a sheet for each driver, showing the date, time of day, location, description of the accident, whether or not the driver was at fault or his action questionable, severity, the insurance claim number, the reserve established and final settlement. At the bottom of the sheet is a quick reference check for chargeable accidents.

As a part of each driver's record, an accident jacket, an envelope (Form 6), is maintained and filed immediately behind his personnel record jacket, eliminating the necessity of checking all records when only accident information is sought.

Each month the statistical information contained in the accident record book and the individual driver's record book is compiled and passed on in bulletin form (Truck Accident Summary) to the division superintendents for handling with their drivers and terminal managers.

FIG. 7 (below) is an overall compact record for immediate reference to company's figures for National Truck Safety Contest, a big time-saver in compiling final results



The introductory sheet in this summary will necessarily vary with different operations, even in the manner of presentation. We usually give first the "accident frequency" for the month, covering "over the road" operations and "general" operations, or city and road operations as a whole, at the same time commenting on whether we think the showing good or bad.

Form 2 becomes a part of the

(TURN TO PAGE 128, PLEASE)



The Why and How of Defensive Driving



The Why SAFETY TEXT NUMBER 12

A BASIC SAFETY SLOGAN was written many, many years ago in one brief sentence, now popularly known as the "Golden Rule," which reads—"Do unto others as you would have others do unto you."

When a driver is where he should be on the road and the other fellow is in his proper and rightful place, there is no possibility for an accident. Conversely, every accident that occurs is usually the result of someone being out of his proper place. Safety thus becomes a matter of individual skill and deportment, for no one deliberately sets out to have an accident. It is discourteousness, thoughtlessness, carelessness, or lack of training—singly or in combination—that lie behind most of our highway accidents.

Safe driving and courtesy go hand in hand. It is just as easy to *make safe and courteous driving a habit* as it is to acquire the habit of driving carelessly and without thought of others.

It is now recognized that most truck drivers are better trained and more skilled than the average automobile driver . . . that, as a class, they now enjoy a good "public relations" status. It is essential, however, that this status be constantly maintained and improved.

One of the principal ingredients of good public relations is the common, "garden variety" of courtesy. The practice of courtesy on the highways will aid materially in achieving greater highway safety and a reduction in highway accidents. Its direct costs are negligible, but its possibilities for dividends are unlimited.

The attitude of drivers while on the highway—the manner in which a vehicle is driven—is of far more importance than what is preached to drivers or what they say about themselves. "Actions speak louder than words!"

Defensive Driving

The expression "Defensive Driving" is a term that has been coined as a result of the varied driving practices as they exist today on the highways. Many of a driver's safety efforts may be defeated by errors of others who are inexperienced, thoughtless, careless or otherwise deficient in their driving.

A "preventable accident" has been defined as "any accident in which the driver failed to exercise every possible precaution to prevent it."

Responsibility to prevent accidents goes beyond mere observance of traffic rules and regulations. The really expert driver will recognize his responsibility to DRIVE DEFENSIVELY, that is, he will drive in such a way that he can prevent accidents in spite of the other fellow's risks and blunders.

A good "defensive driver" is said to be:

"One who makes allowances for the lack of skill and the lack of knowledge on the part of the other fellow—who recognizes that he has no control over the unpredictable actions of other drivers and pedestrians, nor over conditions of weather and roads and who, therefore, develops a defense against all these hazards. He concedes his right-of-way and makes other concessions to avoid collision. He is careful to commit no driving errors himself, and is defensively alert to avoid the accident traps and hazards created by weather, roads, pedestrians, and other drivers."

When a driver takes his vehicle onto the highway today, he immediately subjects himself to a number of uncertain and unpredictable intangibles.

He has no knowledge of the reactions of the drivers he will meet. He only knows that there is a possibility that an approaching driver may be inexperienced; physically deficient with poor eyesight, poor hearing, poor reflexes; and, in addition, possess poor judgment.

He doesn't know whether the man has been trained in safety, or if so, that he will follow the rules of safe driving.

He has no assurance that the other driver will not "hog the road" or turn directly into his path.

In addition, he cannot be sure of what adult or juvenile pedestrians will do, or when they will dart in front of his vehicle.

It is because of these and many other unpredictable situations confronting him in every city block or country mile that the safe driver is a defensive driver.

In the final analysis, the greatest force in the direction of safety lies in the *attitude and conduct* of the drivers themselves—the men who are at the wheel of the vehicles on the highways and city streets.

Strive to help every driver to follow the Golden Rule in driving.

When each truck driver observes this Rule, his own job is made more secure, his employer's business and reputation are enhanced, and the general public gets added benefits through better transportation service.

(TURN TO NEXT PAGE, PLEASE)

No. 12 DEFENSIVE DRIVING

The How of DEFENSIVE DRIVING

SAFETY INSTRUCTION NO. 12

Highway Courtesy

ALL TRUCK OPERATORS should be sold on the necessity for a definite and aggressive safety program which includes the utmost courtesy to other users of the highways. It should start with the establishment of a definite policy and understanding with your drivers that courteous driving is just plain common sense.

Impress upon your drivers that, as your representatives, their conduct at the wheel reflects upon your entire organization. A discourteous action on the part of any one of them can cost you a valuable contract, create an unfavorable reputation in your community, and jeopardize the goodwill built up from many years of conscientious effort.

Remind your drivers also that courteous driving is *safe* driving and that the courteous treatment accorded to other drivers will not only benefit your organization through public approval but will safeguard their lives and economic welfare as well.

For example, the courteous driver will:

1. **Take his turn in traffic,** not crowding other vehicles aside. (To do otherwise is the mark of the "road hog.")
2. **Maintain his proper position on the highway** and drive in one traffic lane, unless passing other cars; not follow other vehicles too closely. (Straddling two lanes is both a nuisance and a hazard to others.)

   (Adequate space between vehicles should be maintained—the proper distance is often prescribed by law.)
3. **Use proper signals** to give others advance warning of action contemplated. (When the fellow behind knows what you are going to do, the rules for orderly traffic can be maintained. If that knowledge is withheld, there is a better than even chance for disaster.)
4. **Let another driver pass** when he signals to do so, unless it appears unsafe. (A good driver knows instinctively when it is reasonably safe for the driver behind to pass, and under such conditions it is certainly courteous to wave the other driver by. On the other hand, it is equally courteous, when conditions are unfavorable, to indicate by hand signal to the driver behind that he shall not attempt to pass.

   (When a driver of a slow-moving vehicle knows that he is holding up a line of traffic on a narrow roadway, he should pull off to the right at the first available opportunity, stopping if necessary, to let these faster moving vehicles pass.)
5. **Use utmost caution** and give consideration to the rights of others whenever it is necessary to pull out of the right hand lane. (Watching the road behind, as well as the road ahead, offers the observant driver opportunities for courtesies to other drivers that are appreciated.)
6. **Pass vehicles ahead** only when there is ample room to get back into the right hand lane without crowding others.
7. **Reduce speed** when 150 feet from an intersection where a turn is to be made and pull into the traffic lane that will, in support of the proper signal, indicate to other drivers whether he is turning right or left.
8. **Not insist upon keeping his right-of-way** if another driver tries to take it.
9. **Dim his multiple-beam headlights** within 500 feet of an oncoming driver at night.
10. **Let other vehicles and pedestrians clear an intersection** before driving ahead. (No fraction of time gained by cheating at a traffic signal is worth an accident.)
11. **Not block pedestrian walks,** private driveways or building entrances, nor stop too closely to safety islands. (Discourtesy in parking will not make friends for the company name on his vehicle.)

"Defensive" Driving

It is further recommended that all drivers be instructed to observe the best of all "safe" driving rules—DRIVE DEFENSIVELY.

A good, defensive driver will, among other things:

(a) **Slow down at every intersection where vehicles are approaching or when vision is obscured.**

(b) **Be prepared for the thoughtless or reckless driver who fails to stop at "stop" signs.**

(c) **Let the other driver take the right-of-way if he insists upon assuming it.**

(d) **Slacken speed, drop back and let into line any driver who tries to pass and misjudges the space available.**

(e) **Slow down when an approaching driver, in passing cars, has difficulty in getting back into his own lane.**

(f) **Drop back and let into line any driver who foolishly tries to pass on a hill or a curve.**

(g) **Hold constant speed and give full opportunity to the driver behind who is intent on passing.**

(h) **Watch out for pedestrians on the open road and at, and between, intersections.**

(i) **Slow down when approaching cyclists or children at play; sound horn, first at a distance so as not to startle, and then again when about to pass.**

(j) **Keep his temper even under the most trying circumstances, for he can't be angry and be a safe driver.**

By giving heed to these thoughtful driving practices, you will greatly decrease the chances of having your own safety efforts defeated by those who are careless and untrained in safety.

Every truck owner and every truck driver has a tremendous stake in SAFETY. Your safety record is your stock in trade—your economic welfare is directly based on it.

A SOUND PROGRAM FOR HIGHWAY SAFETY IS GOOD BUSINESS.



SAFETY INSTRUCTIONS

In This Highway Safety Program for Commercial Vehicle Operators

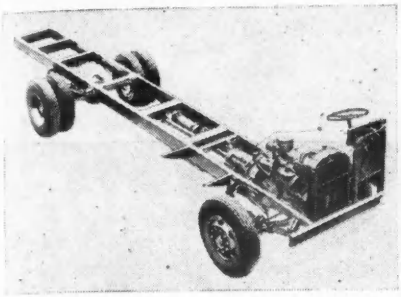
THIS ISSUE: Defensive Driving

PRECEDING ISSUES:

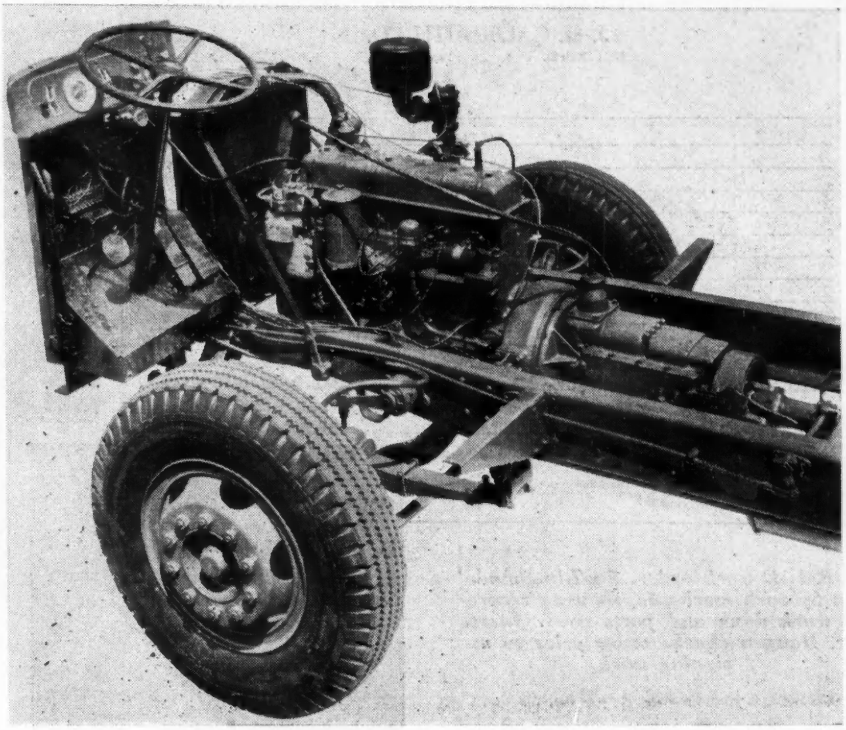
- Management Responsibility
- Driver Responsibility
- Driver Selection, Training and Supervision
- Accident Reports and Records
- Human Engineering
- Visual Information . . . Contents . . . Awards
- Group Safety Meetings . . . Development of Safety Committees
- First Aid Training
- Conservation of Equipment
- Unusual Highway Hazards
- Fire Prevention (Incorrectly titled "Accident Reports" in the August issue).

NOTE: This is the last in a series of 12 articles on Safety Instructions. Like preceding installments it is arranged for easy removal and insertion in standard three ring binder. Save them! Use them!

Copyright, 1949, by National Council of Private Motor Truck Owners, Inc.



ABOVE Chassis features short wheelbase, oversized air brakes and extra-capacity cooling system



RIGHT Forward arrangement of controls, somewhat similar to light multi-stop vehicles, is unique for this size

FEDERAL F105

Features Forward Control

New heavy-duty model for truck or bus use has 23,000 lb gvw; gasoline or diesel power

A NEW heavy-duty commercial chassis, the F-105, developed by Federal Motor Truck Co., features a forward control design readily adaptable to the department store or the furniture van field. While produced primarily for urban and interurban bus service, the chassis itself can be used for all types of forward control body equipment. GVW is 20,000 to 23,000 lb, depending upon the application of the vehicle. Tires are standard 9:00/20, with larger sizes and either spoke or disc wheels available.

Wheelbase lengths are approximately 4½ ft shorter than present comparable Federal chassis, assuring much shorter turning radius. Of heavy-duty one-piece channel frame construction, the F-105 is available in a number of wheelbase lengths ranging from 120 in. to 240 in. The foundation of the Federal chassis is a rugged 8 11/16 x 2⅞ x 5/16 in. frame of fish belly design with increased frame depth at rear to give extra support to body overhang.

155 HP Engine

THE T-6427F valve-in-head engine with 427 cu in. displacement develops 155 hp at 2600 rpm and has a torque output of 342 lb ft at 1400 rpm.

Model DXLD diesel engine with a 426 cu in. displacement and 142 hp can be furnished as well as a Federal T-6371F, 133 hp, valve-in-head engine as optional equipment.

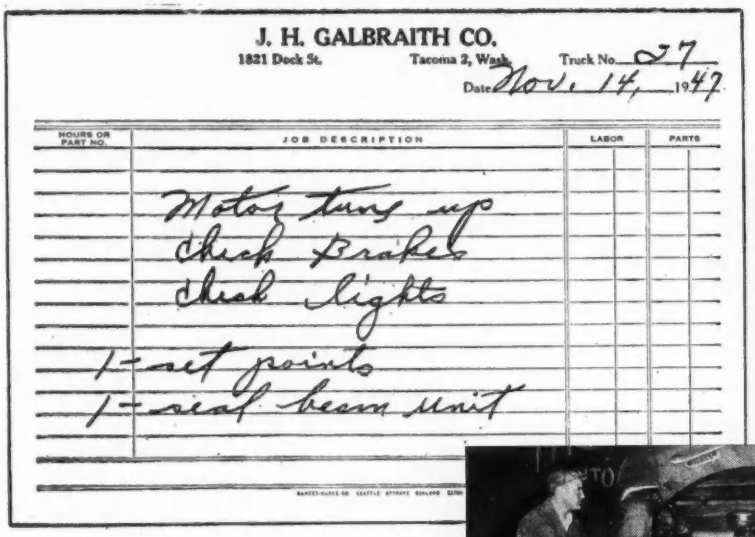
Gross vehicle weight for the model F-105 is 20,000 to 23,000 lb depending upon application of vehicle. Tires are standard 9:00/20 with larger sizes and either spoke or disc wheels available. While primarily designed for 29 to 33-passenger service, the chassis itself is adaptable to all types of forward control bus and body equipment.

Attention has been given to safety in the construction of this vehicle. It is equipped with extra large capacity air brakes, 16¼ x 3 in. at front, 16½ x 5 in. at rear. Brake equipment includes two air reserve tanks. A 14-in. clutch is standard as is a 5-speed transmission.

Enlarged Cooling System

FEATURES of this unit include extra large cooling capacity for operation of vehicle in tropical temperatures, 1¾ in. down-draft car-

(TURN TO PAGE 140, PLEASE)



J. H. GALBRAITH CO.
1821 Dock St. Tacoma 2, Wash. Truck No. 27
Date Nov. 14, 1947

HOURS OR PART NO.	JOB DESCRIPTION	LABOR	PARTS
	Motor turns up		
	Check Brakes		
	Check Lights		
1	set points		
1	seal beam unit		

FORM A, work order, 5 x 7-in., made out by each mechanic, showing record of work done and parts used. Inset. Mr. Haugen checks order prior to assigning work





Maintenance superintendent clips work orders together at end of month, totals costs of labor and parts and takes them to bookkeeper

MECHANICS' WORK ORDERS

Guide Small Fleet PM

By Oscar Haugen
Maintenance Superintendent
J. H. Galbraith Co.

MUCH HAS been said during the past years about the importance of records in carrying out a dollar and cents economical PM program. Here at the J. H. Galbraith Co. we believe in effective records to keep tab on the work done on each unit going through our shop, but we are convinced that mechanics do not make good bookkeepers.

We handle the maintenance and major overhauls for the Inter-City Auto Freight, and it is with this fleet as well as our own that this article deals. We have 15 semi-trailers, 2 full trailers, 14 tractors; the rest range from small ½-ton pick-ups to large van and flat types.

Ninety-five per cent of our hauling is between Tacoma and Seattle, a matter of some 40 or 50 miles per run. For this reason we are able to see daily or at least every other day each unit of the 65 total units operating as common freight carriers. This fact somewhat counteracts the added maintenance problems presented by short runs.

All of our maintenance work is done at our Tacoma shop with a day crew of two mechanics (one of them, a foreman) and a greaser, and a like crew on the night shift. The superintendent is in charge of both crews. Major overhaul work is done during the day and maintenance work at night. Crankshaft turning and tire recapping are farmed out. We do our own body work and painting. The foreman is responsible for all pencil work done on the shop floor, yet each man is thoroughly familiar with each unit.

Mechanic Responsibility

NOW, with better trained and more experienced mechanics available, we feel that it is time to put the responsibility upon the place and persons where it belongs. That place is the shop, and these persons are the mechanics.

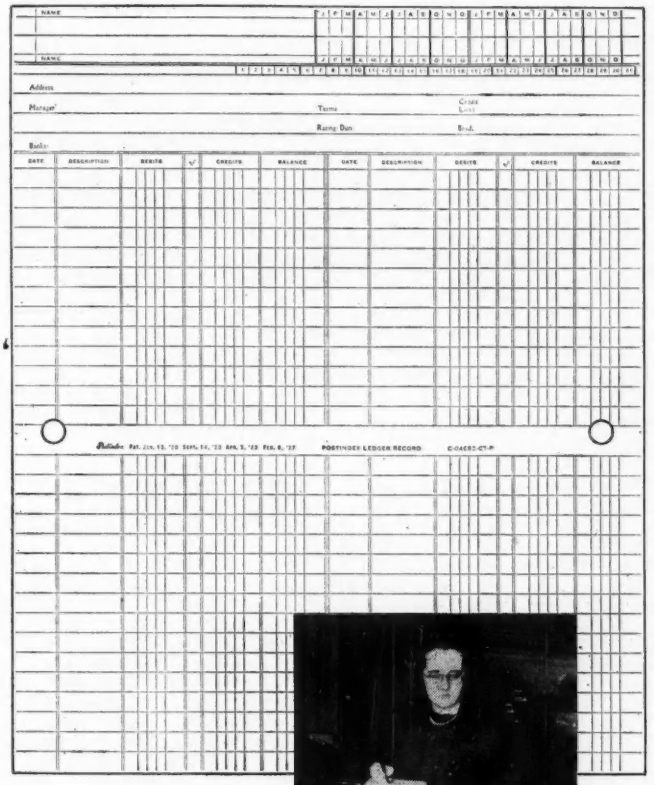
Each unit is fueled by the greaser before its scheduled run. He records on a regular form the truck number, the speedometer reading, the number of gallons of fuel, the amount of oil, and signs his name. This form is posted at the pumps. It is turned in to the superintendent when it has been completely filled, or at the end

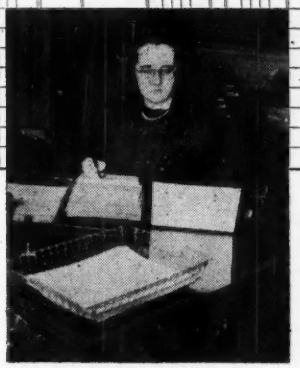


1941 G. M. C. Truck #25
Motor No. 24215577
Serial No. CF-405-126

Completely Motor Overhaul
Brakes relined
Front end rebushed
Cab Repainted
New Body rebuilt

FORM B, reference card, 7 x 4 in., contains a description of job and date. Inset, foreman refers to card before assigning work





FORM C, consolidation record, 3½ x 8 in., made up from information listed on work order. Inset, bookkeeper makes a consolidation sheet in triplicate for each unit

Three forms comprise PM records, while 5 steps complete service. Mechanics inspect vehicle, fill out work orders, accept responsibility for work

of a shift when the last truck is serviced.

Step I—Road Check

THE UNIT is moved about the yard and to the pumps by one of the mechanics. He has a chance to get the "feel" of the truck and does not need to wait for the driver to report complaints. The man doing the repair job gets a first-hand chance to detect the slipping clutch, to listen to the idling speed, and to sense the condition of the truck in that handling.

We have found that this common sense checking is more effective than long, cumbersome check lists. All of the items on these lists are very often checked at one time before the mechanic goes to work on the job. Then he proceeds from memory or as his common sense directs him. Thus we place the responsibility directly upon the mechanic letting him use his common sense in the first place. It removes a distasteful part of his job and gives him more time for a mechanic's work. He knows what to check and watch on every run every week because he knows every unit of his fleet, and he knows that he is responsible for that unit. Giving him a pencil and a checklist will not increase his integrity. We trust him—let him spend his time doing a mechanic's work and using a minimum number of forms.

When a driver discovers that his truck needs repair or adjustment, he reports to the shop foreman or to me at once. If the shop men during their check-up find jobs that should be done, they report to the foreman or to me. Or if during the regularly 14-day check needed repairs or adjustments are found, they are reported.

Step II—The Work Order

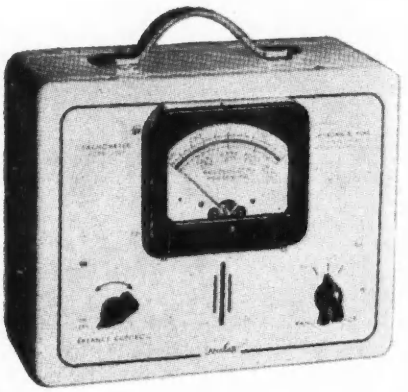
THE superintendent or foreman then makes out a form (Form A) which shows the hours and parts number in the first column, the job description in the second column, the cost of labor in the third, and the cost of parts in

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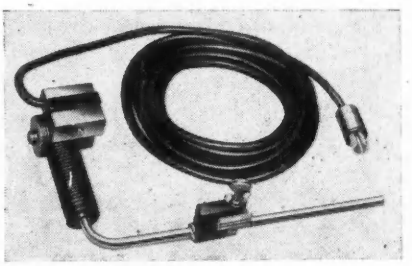
Principles of Precision Testing with

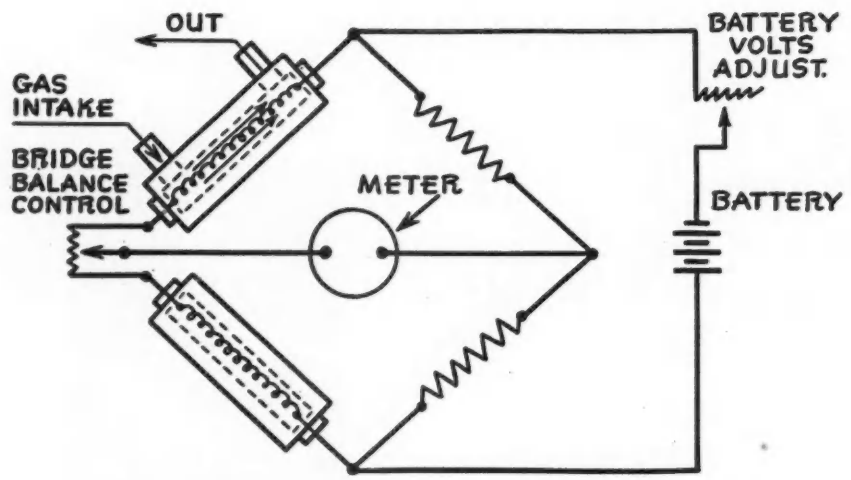
Exhaust Gas Analyzers

A survey of manufacturers reveals some of the latest developments in portable instruments for checking efficiency of combustion and carburetor air-fuel ratio

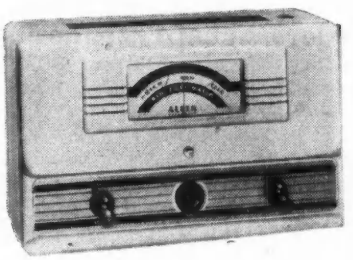


ABOVE. The Lanagan and Hoke analyzer. BELOW. Allen's tailpipe analyzing element for use with the tester

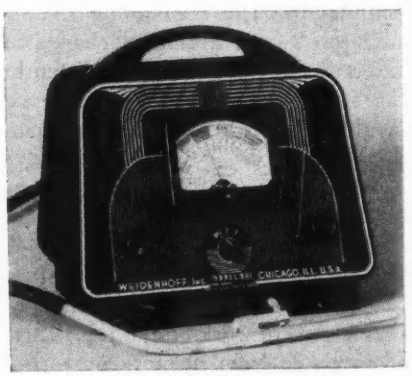




Schematic diagram showing Wheatstone Bridge principle of operation. All thermal conductivity types shown use this



ABOVE. Allen's Model E-306 tester with meter scale. BELOW. The Weidenhoff portable combustion analyzer



GAS ANALYSIS in most of the testing devices available from manufacturers is based on the conventional Wheatstone Bridge and operates on the thermal conductivity principle. Two opposite arms or branches of the bridge consist of fine wires having a high temperature coefficient heated by a source of voltage usually a battery. These wires may be material such as nickel, iron, platinum, etc., having a low electrical resistance. The other two arms or branches of the bridge are resistors which can be made from material such as manganin, nickelin, advance, etc., having a high electrical resistance and a low temperature coefficient. The first two branches of low resistance wire are the operating thermo electric cells of the bridge and are heated to similar temperatures. Both cell wires have exactly the same electrical resistance and will maintain this balance in resistance as long as they are sur-

(TURN TO PAGE 90, PLEASE)

FOR *Easier, Faster* VACUUM POWER BRAKE SERVICE

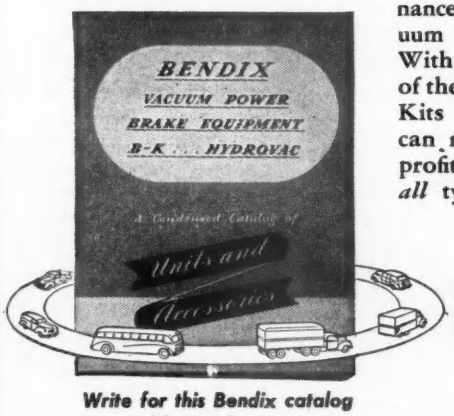


The Bendix Hydrovac Analyzer gives you a complete hydraulic-vacuum test panel and bench. It is a precision instrument which will test all models of Hydrovac plus any vacuum power cylinders, control valves and other vacuum power brake units.

...Work Out of Efficient Bendix Parts Kits!

It's the way a good mechanic likes to work—everything right at his finger tips, ready to use, with no lost motion or valuable time wasted. Only those parts are included which experience has shown you use most often in normal repair and maintenance of Bendix* Vacuum Power Brakes. With a wide variety of these Bendix Parts Kits available, you can now handle the profitable servicing of *all* types of Bendix Vacuum Power Brakes, from modern Hydrovac* models to older "piston and cylinder" units. In addition, the compact, clearly labeled Bendix Kits reduce your parts and inventory problems to an absolute minimum. From any viewpoint, in stockroom or garage, these Bendix Parts Kits make your work easier and faster. Find out more about these great service helps—contact your Bendix Distributor today.

*REG. U.S. PAT. OFF.



Write for this Bendix catalog of better braking.

BENDIX PRODUCTS
DIVISION of
SOUTH BEND 20, INDIANA
Bendix AVIATION CORPORATION

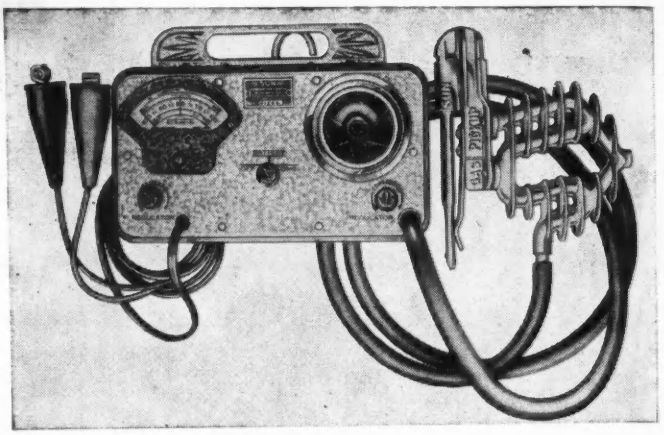
Export Sales: Bendix International Division, 72 Fifth Avenue New York 11, New York



Look for this Bendix sign of better braking.

. . . Exhaust Analyzers

Continued from Page 88



rounded by similar gases which in this case is air. See diagram.

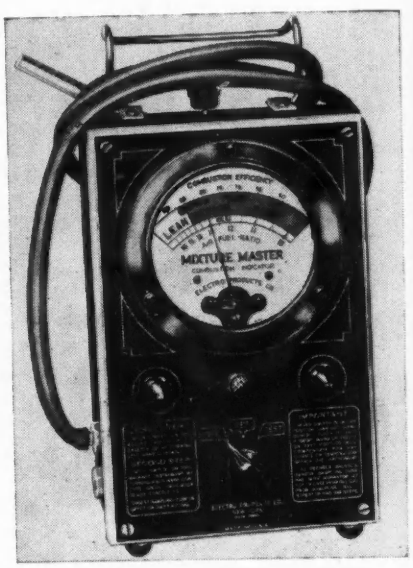
The functions of the two thermo electric branches of the bridge are as follows:

A predetermined fixed battery voltage is applied to the bridge parallel to the low and high resistance branches. The meter is connected across the opposite side from the center of the low resistance branches to the center of the high resistance branches. The high resistance branches are used to balance the bridge only and are not heated as they have a high value. The low resistance cell wires are heated by the passage of electric current through them. One cell wire is sealed against the entrance of air and will have a constant electrical resistance because of its uniform radiation of heat to the surrounding metal wall through the unchanging air column. The other operating cell wire is subject to the presence of gases to be tested by means of two ports or openings into this cell. A rising column of heated air is thus created.

One of these openings will draw gases in from the main vertical passage which carries the main stream of gas from exhaust pipe. The other opening will discharge the heated air and gas back into the same main passage. As the carbon monoxide and unburned fuel content of this gas increases its thermal conductivity will also increase. More heat will be conducted from the heated cell wire to metal wall, thereby reducing the temperature of cell wire. This will lower the electrical resistance of cell wire and disturb the electrical balance of bridge. This change in resistance will cause the meter pointer to deflect toward the rich side of meter dial.

If carbon monoxide and unburned fuel content of the gas present decreases, its thermal conductivity becomes lower and less heat is conducted from cell wire to metal wall.





TOP. Model H tester with tail pipe attachments, made by Sun Electric Corp. ABOVE. Model E combustion analyzer, designed by Electro Products Co.

TOP. Model G-106 analyzer built by Electric Heat Control. ABOVE. Permutit's mechanically-operated combustion tester

This is also aided by a gradual increase in carbon dioxide as the fuel combustion becomes more efficient and carbon dioxide is a poor conductor of heat. As a result the temperature of cell wire will increase which in turn develops more resistance in this cell wire. Since the meter pointer is primarily adjusted for a normal zero balance, such increased resistance will again disturb the electrical balance. More current will now flow through the other sealed cell wire which has a relatively lower resistance. This will cause the meter to indicate toward the lean side of scale.

Electric Heat Control

The King Type G-106 tester employs the principle of the Wheatstone Bridge, with two special alloy wires and two resistors forming the four arms of the circuit. The analyzing cell operates at low temperature, a factor which prolongs the effective life of the elements. The company

(TURN TO PAGE 114, PLEASE)

Always far ahead of the field....



SEALED POWER MD-50 STEEL OIL RING

The only ring with the FULL-FLOW SPRING

Fleet owners everywhere are switching to Sealed Power Piston Rings for better oil economy, easier starting, longer life! They say the Sealed Power MD-50 Steel Oil Ring is the greatest steel oil ring ever built. They say they get thousands of extra miles from Sealed Power Ring Sets with the MD-50. This great Sealed Power Ring, the only ring with the Full-Flow Spring, offers you all the exclusive advantages shown at the left.

FULL FLOW OF OIL

THROUGH RING

THROUGH SPRING

THROUGH PISTON OIL HOLES

TWICE AS MANY SLOTS FOR OIL DRAINAGE

Single-slot spring

Full-Flow Spring

CURVES instead of HUMPS

TO INSURE UNIFORM POSITIVE PRESSURE

MORE BEARING AREA FOR LONGER LIFE

Insures longer life for ring and spring. Greater flexibility means easier starting. Works perfectly even in tapered and out-of-round bores.

NOW FEATURED IN ALL SEALED POWER "X" RING SETS.

Sealed Power

PISTON RINGS

BEST IN NEW TRUCKS! BEST IN OLD TRUCKS!

Ask for Sealed Power Pistons, Cylinder Sleeves, Piston Pins, Valves, Water Pumps and Chassis Parts. Sealed Power Corporation, Muskegon, Michigan.

New Truck Registrations by Makes by States*

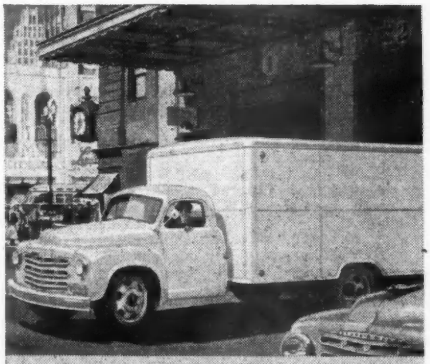
STATE		Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Pon-tiac	Reo	Ster-ling	Studie-baker	White	Willys	All Others	Total
Alabama	June	.....	.....	724	1	6	205	1	311	.....	174	112	.....	11	.....	1	.....	81	22	49	2	1,700
	6 Mos.	1	.....	4307	12	14	1153	9	1846	.....	924	657	.....	40	1	20	.....	584	89	379	25	9,821
Arizona	June	.....	.....	230	.....	1	93	.....	197	.....	82	34	.....	.....	1	3	.....	68	2	19	9	739
	6 Mos.	1	.....	998	3	9	339	2	659	2	236	170	2	3	1	19	2	250	12	130	32	2,870
Arkansas	June	.....	.....	284	.....	.....	64	.....	212	.....	65	50	.....	1	.....	3	.....	51	.....	20	.....	751
	6 Mos.	2	.....	4827	35	.....	1095	1	2258	1	964	686	.....	8	.....	67	.....	718	25	581	20	11,091
California	June	6	.....	1837	22	43	673	.....	653	.....	521	377	14	13	4	28	11	269	24	79	27	4,599
	6 Mos.	52	18	10345	119	258	3541	16	4124	5	2712	1919	61	101	6	111	38	2009	199	711	149	26,525
Colorado	June	.....	.....	501	5	.....	172	3	146	.....	130	83	.....	3	.....	1	.....	92	3	60	.....	1,202
	6 Mos.	1	.....	2317	42	6	821	9	943	.....	578	578	.....	5	1	11	.....	378	21	353	6	6,073
Connecticut	June	4	2	219	9	8	104	2	89	1	47	80	.....	8	1	3	1	26	4	28	3	639
	6 Mos.	26	16	1170	40	45	443	17	587	4	274	404	.....	70	1	20	1	209	14	145	20	3,506
Delaware	June	.....	.....	92	3	.....	19	1	32	.....	20	27	.....	.....	.....	.....	.....	11	.....	3	1	209
	6 Mos.	2	3	559	13	1	171	1	302	.....	114	168	.....	2	2	3	.....	62	12	23	5	1,443
District of Col.	June	.....	.....	88	.....	8	66	2	26	.....	34	44	.....	1	3	1	.....	8	3	2	3	291
	6 Mos.	24	2	432	7	34	212	16	301	.....	114	145	.....	18	6	11	.....	36	21	31	10	1,420
Florida	June	.....	.....	753	6	7	233	3	332	.....	143	104	.....	14	.....	8	.....	122	8	97	4	1,836
	6 Mos.	1	.....	3423	61	33	1074	11	1576	.....	628	675	.....	81	.....	41	.....	523	63	423	31	8,647
Georgia	June	.....	.....	801	9	4	246	2	324	.....	151	135	.....	10	1	6	.....	111	9	55	2	1,866
	6 Mos.	2	1	5831	83	5	1761	17	3313	.....	1063	1352	.....	98	28	93	.....	918	103	668	24	15,160
Idaho	June	.....	.....	152	10	.....	45	.....	58	.....	54	42	.....	.....	.....	1	.....	41	1	34	.....	438
	6 Mos.	1	.....	934	38	.....	327	3	433	8	329	345	28	7	.....	14	.....	321	7	282	16	3,091
Illinois	June	7	1	1811	29	19	840	3	646	.....	313	486	.....	12	4	9	.....	257	45	92	15	4,289
	6 Mos.	56	6	9517	290	139	3179	35	4333	13	1756	3253	.....	87	12	189	2	1433	381	782	105	25,531
Indiana	June	2	.....	767	9	5	285	1	414	1	241	227	.....	3	1	6	.....	179	16	59	3	2,198
	6 Mos.	10	3	3809	58	71	1280	14	1915	1	1057	1489	1	56	4	62	.....	981	143	399	48	11,167
Iowa	June	3	.....	1008	19	.....	259	.....	404	.....	188	306	.....	5	.....	9	.....	203	7	50	3	2,464
	6 Mos.	6	.....	4860	103	20	1536	5	2108	9	802	1483	1	31	6	46	.....	840	38	471	44	12,407
Kansas	June	.....	1	1233	9	1	314	5	387	.....	268	259	1	2	1	9	.....	205	6	70	3	2,773
	6 Mos.	.....	1	5065	57	14	1381	24	1968	.....	1039	1292	1	5	9	52	.....	851	35	348	28	12,173
Kentucky	June	1	.....	664	5	2	185	1	236	.....	166	131	.....	6	.....	2	.....	57	11	44	6	1,517
	6 Mos.	3	1	3777	55	18	1071	12	1780	1	853	870	.....	27	2	29	.....	454	59	895	27	9,924
Louisiana	June	.....	.....	599	7	1	162	1	314	.....	157	113	.....	4	.....	.....	.....	113	9	60	6	1,548
	6 Mos.	2	.....	3201	58	10	995	4	1924	1	785	704	.....	27	1	19	.....	617	48	313	39	8,746
Maine	June	1	2	164	.....	1	47	.....	58	.....	68	43	.....	6	.....	2	.....	31	4	14	.....	439
	6 Mos.	5	10	1156	3	6	334	5	547	.....	363	346	.....	32	2	36	1	194	27	127	10	3,204
Maryland	June	2	5	266	4	1	115	4	121	.....	67	93	.....	9	.....	6	.....	37	12	23	6	771
	6 Mos.	25	28	1877	25	34	752	20	911	.....	352	499	.....	65	2	32	.....	209	67	147	27	5,072
Massachusetts	June	11	11	341	6	25	170	1	149	1	79	124	.....	15	.....	6	9	60	16	23	.....	1,047
	6 Mos.	70	56	2022	34	85	937	8	1219	5	432	665	.....	117	2	44	26	373	116	161	13	6,385
Michigan	June	2	.....	1133	7	27	300	4	729	.....	255	186	.....	10	2	6	.....	132	12	57	9	2,871
	6 Mos.	19	3	6730	61	121	1957	37	3559	.....	1383	1103	.....	68	7	54	.....	781	103	415	84	16,483
Minnesota	June	2	.....	969	4	5	198	1	317	.....	127	214	.....	6	.....	5	.....	192	5	28	4	2,075
	6 Mos.	46	.....	4303	49	34	1235	12	2034	4	842	1372	5	41	8	15	.....	983	41	276	46	11,328
Mississippi	June	.....	.....	516	4	.....	156	.....	251	.....	173	86	.....	3	.....	7	.....	99	3	31	4	1,333
	6 Mos.	1	.....	3792	29	.....	1060	1	1549	.....	963	808	.....	19	.....	23	.....	483	19	388	19	8,952
Missouri	June	.....	.....	1000	9	4	287	.....	374	.....	272	190	.....	2	.....	7	.....	103	5	94	7	2,354
	6 Mos.	5	1	5781	45	50	1693	1	2216	.....	1171	1163	.....	32	2	71	.....	658	139	528	32	13,586
Montana	June	.....	.....	236	4	1	93	1	121	.....	91	54	2	1	.....	2	.....	70	2	62	1	741
	6 Mos.	5	.....	1546	55	3	519	11	785	7	527	524	11	3	1	32	.....	370	13	558	17	4,987
Nebraska	June	.....	1	631	15	.....	118	1	186	1	175	171	.....	1	.....	2	.....	138	1	80	3	1,524
	6 Mos.	.....	2	3203	168	2	890	8	1415	6	755	1099	9	10	2	16	.....	669	37	651	38	8,979
Nevada	June	.....	.....	52	.....	.....	14	1	30	.....	22	14	.....	1	.....	.....	.....	13	.....	18	3	168
	6 Mos.	1	.....	279	2	1	95	1	164	.....	95	70	.....	2	.....	3	.....	101	.....	74	5	893
New Hampshire	June	.....	1	69	1	1	28	1	27	.....	27	21	.....	4	.....	.....	.....	10	1	14	.....	203
	6 Mos.	3	6	658	15	10	234	2	415	.....	166	200	.....	35	1	9	1	75	8	90	4	1,932
New Jersey	June	8	9	579	16	8	176	7	264	.....	236	162	.....	35	8	7	.....	88	30	51	4	1,686
	6 Mos.	68	88	3545	91	76	1246	41	1820	9	1089	1101	1	195	19	48	2	463	155	432	64	10,547
New Mexico	June	.....	.....	255	3	.....	102	1	58	.....	62	23	.....	3	.....	.....	.....	43	5	30	1	586
	6 Mos.	1	.....	1347	23	2	456	2	449	.....	328	219	.....	9	.....	11	.....	225	19	104	25	3,220
New York	June	14	35	1078	49	37	565	11	598	2	343	358	.....	60	2	18	5	153	88	100	32	3,548
	6 Mos.	215	328	7054	312	206	3989	105	3957	33	2204	2687	.....	577	15	240	9	1151	477	940	217	24,696
North Carolina	June	1	.....	572	4	4	182	1	265	.....	153	114	.....	41	.....	3	.....	103	19	50	10	1,822
	6 Mos.	9	.....	4751	25	15	1131	7	2185	.....	664	905	.....	140	.....	44	2	621	89	486	79	11,133
North Dakota	June	.....	.....	294	7	.....	62	4	142	.....	53	88	.....	.....	.....	.....	.....	35	1	24	.....	710
	6 Mos.	6	.....	1254	43	3	344	12	776	.....	279	598	.....	2	.....	4	.....	269	4	200	8	3,802
Ohio	June	3	.....	1160	21	29	434	12	527	2	232	393	.....	24	5	10	.....	177	64	91	5	3,189
	6 Mos.	43	9	7357	130	179	2733	89	3470	6	1249	2022	.....	107	25	82	.....	1091	385	695	79	18,731
Oklahoma	June	.....	.....	916	1	3	315	.....	320	2	241	190	.....	.....	5	9	.....	196	12	78	4	2,292
	6 Mos.	6	.....	4111	10	15	1318	2	1795	4	869	1063	.....	11	11	35	.....	638	54	496	19	10,455
Oregon	June	3	.....	388	8	6	164	7	172	.....	139	107	3	55	1	.....	1	48	4	62	12	1,160
	6 Mos.	12	.....	2230	31	27	891	16	1133	3	681	632	33	87	4	24	4	395	65	428	54	6,750
Pennsylvania	June	11	27	1486	25	12	590	4	722	1	396	381	.....	58	.....	18	.....	210	69	86	23	4,097
	6 Mos.	98	151	7429	186	45	3370	40	4042	4	1943	2284	.....	322	1	114	16	1342	400	814	123	22,072
Rhode Island	June	7	.....	95	2	15	64	.....	50	.....	20	35	.....	10	.....	1	2	18	8	20	.....	347
	6 Mos.	43	3	581	27	63	261	.....	455	.....	141	242	.....	44	3	13	8	107	27	95	15	2,128
South Carolina	June	1	.....	371	2	5	278	.....	151	2	110	46	.....	8	1	4	.....	66	3	7	1	1,056
	6 Mos.	3	.....	2371	13	9	811	1	1021	3	469	410	.....	72	2	16	.....	281	44	183	12	5,721
South Dakota	June	.....	.....	351	9	.....	99	.....	109	.....	61	119	.....	.....	1	2	.....	65	1	41	2	860
	6 Mos.	.....	.....	1290	78	1	439	5	645	9	274	681	.....	2	1	9	.....	293	5	328	27	4,087
Tennessee	June	.....	.....	709	3	.....	209	.....	284	.....	184	144	.....	6	.....	7	.....	95	15	60	2	1,718
	6 Mos.	3	4	6173	73	19	1738	43	2274	.....	1610	1637	.....	108	9	123	.....	733	162	681	55	15,445
Texas	June	4	.....	2514	21	20	904	1	1056	.....	796	586	3	11	.....	17	.....	509	35	242	45	6,746
	6 Mos.	35	2	12145	80	78	4300	9	5716	.....	3117	2711	7	80	1	78	.....	2061	215	1500	302	32,374
Utah	June	.....	.....	164	4	1	67	.....	60	.....	45	60	.....	2	2	2	.....	35	4	31	3	480
	6 Mos.	.....	.....	970	36	8	321	12	511	4	319	325	12	15	3	20	1	226	17	160	18	2,978
Vermont	June	.....	.....	63	.....	.....	32	.....	24	.....	29	23	.....	.....	2	2	.....	11	.....	9	.....	195
	6 Mos.	.....	7	632	10	5	242	8	359	.....	211	330	.....	6	2	17	.....	217	7	196	12	2,261
Virginia	June	4	3	823	2	4	240	1	312	.....	165	133	.....	14	1	4	.....	88	14	55	4	1,867
	6 Mos.	14	28	4425	44	15	1197	11	2028	.....	775	875	.....	75	1	33	.....	577	70	434	35	10,837
Washington	June	6	.....	337	5	5	188	1	202	.....	134	111	21	2	1	2	3	63	9	55	12	1,157
	6 Mos.	9	.....	2396	34	38	953	11	1306	.....	664	740	37	29	3	28	10	473	53	408	47	7,239
West Virginia	June	.....	.....	337	4	1	131	.....	135	.....	118	70	.....	.....	.....	2	.....	31	5	82	2	918
	6 Mos.	1	.....	1770	24	8	769	6	955	16	426	391	.....	17	.....	23	.....	220	35	543	22	5,228
Wisconsin	June	2	.....	729	10	17	212	1	315	2	137	178	.....	5	5	8	2	111	31	30	7	1,802
	6 Mos.	11	.....	3830	81	68	1197	18	1859	34	781	1412	.....	52	9	74	2	684	106	384	96	10,678
Wyoming	June	1	.....	138	5	.....	44	1	63	.....	57	42	1	.....	.....	4	.....	31	2	42	1	432
	6 Mos.	1	.....	730	38	.....	240	2	364	2	158	223	2	6	.....	13	.....	144	5	222	7	2,157
Total	June, 1949	106	97	30559	401	337	10227	91	12975	15	7820	7189	45	483	52	251	34	4953	650	2508	296	79,069
Total	June, 1948	185	200	25968	858	527	6856	324	21695	53	5608	11636	27	814	.....	954	26	2987	1018	6907	474	87,117
Total	6 Months, 1949	944	775	172510	2949	1903	58011	744	82104	194	39528	45285	209	3044	216	2169	123	28232	4196	20041	2249	465,426
Total	6 Months, 1948	1457	1680	184286	5573	3243	58186	2808	118852	431	34522	70268	235	5526	.....	8285	246	23534	6389	38166	3084	534,517

*Data from R. L. Polk & Co.



New Studebaker trucks excel in high torque performance!

They're marvels in tough going . . . and they go very easy on gasoline!



Sizes and wheelbases for hundreds of needs! The new Studebaker trucks come in ½-ton, ¾-ton, 1-ton, 1½-ton and 2-ton capacities. Roomy, weather-tight cabs with enormous visibility. Cab steps are enclosed inside doors. New "lift-the-hood" accessibility is a big help—engine, ignition, instrument panel wiring are within easy arm's reach.

TALK to contractors who use 1½-ton and 2-ton trucks and you'll really hear high praise for the new Studebaker 16A and 17A series.

Yes, reports from every section of the country clearly show that these rugged, reliable Studebaker 1½-ton and 2-ton trucks do a truly sensational job of hauling when the footing is bad and the going is strenuous.

One owner after another has written glowingly about the "get-there" certainty of Studebaker pulling power and the consistently low cost of Studebaker operation per load and per mile.

Whether it's used in construction work, or in hundreds of other kinds of haulage, every Studebaker 16A and 17A series truck has the special advantage of the amazing Studebaker "Power Plus" truck engine—a standout performer both in horsepower and in pounds feet of torque.

There's new ruggedness of structure too, in these husky 1½-ton and 2-ton Studebakers. There's new comfort for the driver and his helpers in the spacious new Studebaker truck cab.

Stop in at a nearby Studebaker dealer's and check up on the new Studebaker trucks. What you see will impel you to put Studebaker up at the top of your list, next time you're in the market for a truck.

STUDEBAKER TRUCKS

NOTED FOR LOW COST OPERATION

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Line Number	MAKE AND MODEL	Chassis List Price	WHEELBASE: Minimum Standard	WHEELBASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES: Standard Front and Rear	TIRE SIZES: D-dual rear S-single rear: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	ENGINE DETAILS: No. of Cylinders, Bore and Stroke	ENGINE DETAILS: Displacement	ENGINE DETAILS: Comp. Ratio	ENGINE DETAILS: Torque lb. ft.	ENGINE DETAILS: Max. Brake H.P. at R.P.M. Given	ENGINE DETAILS: Main Bearings: Number Diameter and Length	Governor Standard	TRANSMISSION: Make and Model	TRANSMISSION: Forward Speeds	REAR AXLE: Make and Model	REAR AXLE: Gear and Type	REAR AXLE: Drive & Torque	REAR AXLE: Gear Ratio Range in High	FRONT AXLE: Make and Model	BRAKES: SERVICE: Make Location Type Operation	BRAKES: SERVICE: Lining Area	BRAKES: SERVICE: Drum Area	BRAKES: SERVICE: Drum Material	BRAKES: Hand Location Type	C-A Dimensions (Min. Std. W. B.)	FRAME: Slide Rail Dimensions	FRAME: Type
1	American-Coleman G-55		136		28000	11400	11.00/20	12.00/20	Buda LO-525	6-4¼x5½	525			150–2200	7-3x7¼		Fu 5A650	5	OW-C-35R			9.66	OW	TW IA	600	638		FD	96		
2	Reo School Buses 119SL & LS		187	200			7.50/20	7.50/20	Own GC245	6-3½x4¾	246.6	21.92	225	89–3100	7-2½x10.7		Y Cla 185F	4	Tim 53547	8F	H6	6.67	Tim 31013	T4IVH	310	482	var	TX		9x3¼	T
3	121 & 121S		200	224			8.25/20	8.25/20	Own GC286	6-3½x5	286	22.5	225	90–3000	7-2½x10.7		Y Cla 231F	4	Tim E100	H/F	H6		Tim 31104	T4IVH	344	532	var	TX		9½x3	T
4	122 & 122S		224	224			9.00/20	9.00/20	Own GC310	6-3½x5	310.6	22.5	243	101–3000	7-2½x10.7		Y Cla 231F	4	Tim H100	H/F	H7		Tim 31104	T4IVH	344	584	var	TX		9½x3	T
5	123		224	251			9.00/20	9.00/20	Own GC310	6-3½x5	310.6	22.5	243	101–3000	7-2½x10.7		Y Cla 231F	4	Tim H100	H/F	H7		Tim 32500	T4IVH	370	644	var	TX		9½x3	T
6	123-123S-123SX		224	251			9.00/20	9.00/20	Con B-4427	6-4½x5½	427.5	9.32	324	127–2700	7-2½x13.5		Y Cla 270V	4	Tim L100	H/F	H6	8.3	Tim 32500	T4IVH	370	644	var	TX		9½x3	T

Truck Specifications

Showing New Models and Revisions Since Last Issue

The specifications of new truck models tabulated at left and the revisions noted below have been received from truck manufacturers since publication of the Commercial Car Journal Truck Specifications Table in the August, 1949, issue. Readers are requested to make note of these changes. Publication of the entire Specifications Table will be resumed in the October, 1949, issue.

DATA SUPPLIED BY MANUFACTURERS AND TABULATED BY
COMMERCIAL CAR JOURNAL

Marmon-Herrington

Transmission changes have been noted on four models:

MH440-4	from Fu 5A430 to MH-31
MH555-4	from Fu 5A620 to MH-33
MH440-6	from Fu 5A430 to MH-31
MH555-6	from Fu 5A620 to MH-33

Main bearing diameter and lengths have been added to the listing for these models: Q-5-6 and Q-6-6, 2⅞ x 5.21 in.

On model R5-COE6, the cab-to-axle dimension (min std wb) is 106.06 in.

Reo

GVW for models D-19A, D-19T, D-19B, D-19C and D-19L have been changed from 14000 to 16000 lb; models D-21A D-21T, D-21B, D-21C, from 15500 to 17000; models D-21R-A, D-21R-T, D-21R-B, D-21R-C and D-21R-L from 18000 to 20000; models D-23T, D-23L, D-23S-A, D-23S-T, D-23S-B, D-23S-C, D-23S-L from 23000 to 24000; models D-23R-T, D-23R-BL, D-23R-L from 25000 to 2600; and model D-236 from 47000 to 43000 lb.

The rear axle listing on model E22B has been changed from Timken H300-300 to Tim H300 and on model E22RT from Tim L300-300 to Tim L300.

The D-22 models, still in production at the time of announcement of the new E-22 series in the August, 1949, issue, have been discontinued including: D-22A, D-22T, D-22B, D-22C, D-22L and D-22R-B.

The following school bus models have been discontinued and are replaced by new models shown at left: C119-31, C119L-43, C119LS-49, C121-49, C121S-55, C122-55 and C-122-L.

Changes in engine data were made on models in the table below.

Model	Compression Ratio	Torque lb ft	Max hp
2R5	7.0	138	85-4000
2R10	7.0	138	85-4000
2R15-21	7.0	138	85-4000
2R15-31	7.0	138	85-4000
2R16A	7.0	205	102-3200
2R17A	7.0	205	102-3200

American-Coleman

The American-Coleman Co. of Omaha, Neb. is now offering a standardized four-wheel drive truck model. Specifications are shown in the table at left.

Federal

The following gross vehicle weights have been added to the listing of six-wheel models:

Model	GVW
663MA	40000
664MAB	55000
664MA	55000
629M	27500
Model	**GVW**
629ML	27500
635M	36000
645M	38000

Truckstell

On model F4x34, the brake lining area has been changed from 700 to 745 sq in. and the drum area from 941 to 1169 sq. in. Service brake data for model F4X38 has been revised as follows: Lining area increased from 825 to 916 sq in.; drum area from 1231 to 1367 sq in. Heretofore, a hydraulic-vacuum-operated type, it is now air-operated.

Side rail dimensions have been modified on four models, F4X34, F4X38, C4X29, C4X30 (coe), from 9⅝ X 3 X ¼ to 9⅝ X 3 X ½. Channel type frame has replaced the channel-tapered front and rear type on models C2X28, C2X29-0(coe), C4X29 and C4X30(coe).

A channel tapered front and rear type frame is used with the D series and the channel type for the FD series listed in the August, 1949, issue.

New data added for models FD1 and FD2 include respectively: Main bearings, 7-3 ¼ X 14½ and 7-4½ X 16¾. Both units have a rear axle of the double reduction, spiral bevel gear type with radius rod drive torque. These models have a brake lining area of 627 sq in. and a drum area of 1029 sq. in. Hand brake location is back of power divider and the brake is mechanically operated.

See August issue, page 89 for specifications of other models

All States Freight, Inc., Akron, Ohio, after five months operating experience with a Mack diesel tractor, says: "With the ever-increasing need to watch costs and our endeavor to please our drivers, this tractor looks like a good bet."

Operating between Jacksonville and Miami, Fla., L. B. Tyndall has this to say about his diesel-powered Mack tractor: "My maintenance has been practically nothing and despite extremely heavy traffic am at present averaging nine miles per gallon with average payloads of 25,000 lbs. I am well pleased with this unit."

Big savings per round trip of 2800 miles with a Mack diesel tractor are reported by Andy Johnson who operates between St. Paul, Minn. and New York City. He writes: "Am averaging 7 miles per gallon with my Mack diesel tractor, powered with the Mack END 672 diesel engine. Our experience with the Mack diesel engine has been more than satisfactory — better than we ever expected."

From Healdsburg, Calif., H. B. Cunningham reports: "My Mack diesel tractor, hauling 5200-gallon tank, averages 6.4 miles per gallon. This engine is doing an outstanding job and the driver is particularly well pleased with its quick acceleration and flexibility."



"Here's Proof MACK DIESELS CUT COSTS • BOOST PROFITS"

Actual owner experience tells a big economy story on Mack diesels. These are just a few of the comments we receive from enthusiastic Mack owners.

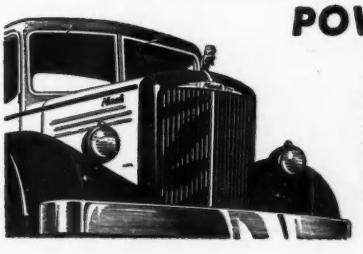
Operating in long-haul service between Detroit, Mich. and Trenton, N. J., J. B. Cox says: "Am averaging 6.5 miles per gallon on each of my two Mack LFT diesel tractors. My experience with these units has proved to me what great savings your diesel equipment offers in long-distance operation. I hope in the near future to change my full fleet to Mack diesel-powered equipment."

On long-distance hilly and mountainous runs between St. Paul-New York and St. Paul-Los Angeles, Leo J. Zimmerman reports 6½ to 7 miles per gallon with full load — 10 miles per gallon empty with his Mack LFT tractor. His comments: "Very snappy motor. Very satisfactory performance as compared with anything on the highway."

From Indianapolis, Ind., Eugene Shockley, owner and driver, writes: "With payloads of 37,240 lbs., I am getting average fuel consumption of 6.3 miles per gallon with my Mack diesel tractor. I consider that my Mack diesel gives me the last word in truck performance."

Mack TRUCKS

GASOLINE or DIESEL POWERED



Mack Trucks, Inc., Empire State Building, New York 1, New York. Factories at Allentown Pa.; Plainfield, N. J.; New Brunswick, N.J.; Long Island City, N.Y. Factory branches and dealers in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.



. . . THOMAS B. MOULE, recently named vice-president in charge of domestic sales by Plomb Tool Co., Los Angeles, Cal., makers of Proto tools.

. . . W. E. BAILEY, service sales and advertising manager for Holley Carburetor Co.

. . . PAUL L. GILLAN as chief engineer of the White Motor Co.

. . . JAMES P. MALMSTROM, assistant to the general manager of the Standard-Thomson Corp. at Dayton, Ohio.

. . . W. A. MCKINLEY, appointed vice-president in charge of engineering at the Midland Steel Products Co., Detroit.



. . . JOHN G. CALEY, who has been appointed district manager of the Mack Truck Co.'s Birmingham, Ala., direct factory branch.

. . . FRANK ROSS, assistant to the vice-president at E. F. Houghton & Co., Philadelphia, Pa.

. . . ALFONS ALVEN, new general sales manager of Rollway Bearing Co., Inc., Syracuse, N. Y.

. . . LEROY E. COWLES, named director of public relations, a new post, for the GMC Truck & Coach Division of General Motors.

. . . CECIL B. FISHER, manager of the used car and truck department for the Pittsburgh sales district of the Ford Motor Co.



. . . LAWRENCE T. GREINER, elevated to manager of the Pacific Coast replacement tire sales division of B. F. Goodrich Co. He succeeded Frank E. Titus, retired.

. . . WILLIAM M. DEMPSIE, who has been named assistant to the general superintendent of motor vehicle equipment, Railway Express Agency.

. . . NORMAN M. STED, recently appointed manager of the manufacturers' product sales division for American Steel & Wire Co. with headquarters in Cleveland.

. . . C. W. MIDDLETON, manager of the Albany parts depot for International Harvester at Menands, N. Y.

. . . E. E. GOEHRINGER, new district manager with sales and engineering responsibility for the Lincoln Electric Co. in the Indianapolis Area.

. . . T. C. WERBE, chairman of the newly created board of directors at the Lynch Corp.





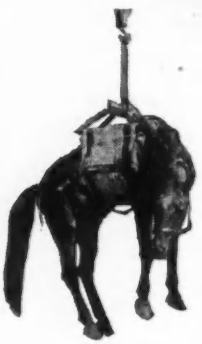
. . . C. J. MCELMAN (left) and R. E. BRYANT, of Wagner Electric Corp., managers of the Minneapolis service branch and the Buffalo, N. Y., automotive and electrical branch, respectively.

Put Your Money on the

Thermoid Line

Built for Heavy Duty Service





Thermoid is the best name in fan belts. Thermoid's famous pre-stretching *prevents* stretch, slip, wear and fail, the four steps that, in ordinary fan belts, mean added maintenance costs. Thermoid fan belts always stay the correct size.

Insist on Thermoid Fan Belts because it's good business to buy the best! Matched sets are available for belt drive applications where needed.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

Exide BATTERIES

LOW COST PER MILE OF OPERATION

...plus dependable starting for an EXTRA LONG TIME



All its service-proved features continue to make Exide the outstanding battery for truck service.

1. Heavy, oversize plates
2. Greater capacity
3. Self-cleaning, non-spitting vent plugs
4. Double insulation between plates
5. "Bull's-eye" electrolyte leveling device
6. Heavy inter-cell connectors
7. Hard rubber container
8. Positive cover seals

1888...Dependable Batteries for 61 Years...1949

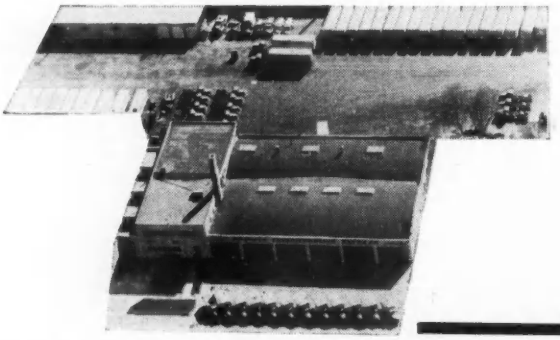
"Exide" *Reg. Trade-mark U.S. Pat. Off.*

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • *Exide Batteries of Canada, Limited, Toronto*

Scrapbook

Of Practical Fleet Practices

A short trip through P.I.E.'s Salt Lake City shop reveals several handy maintenance tips



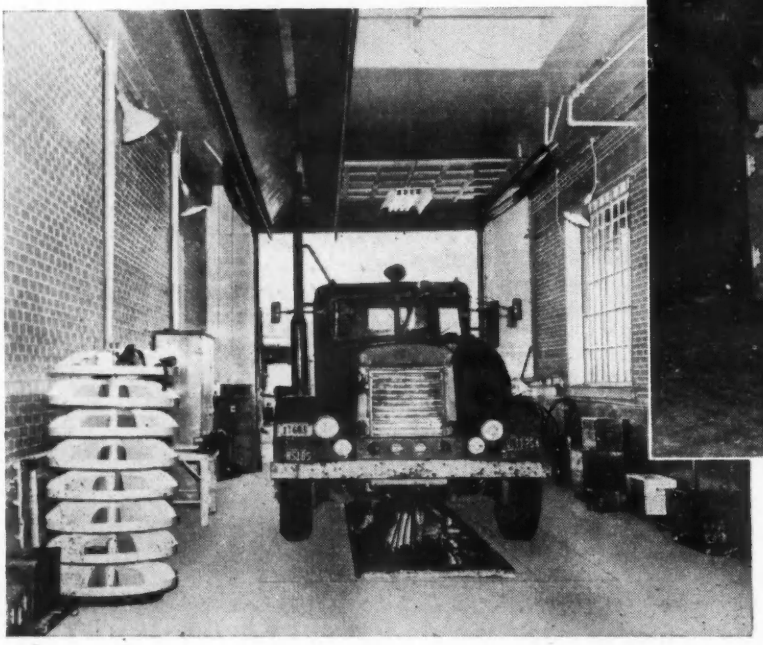
THIS MONTH this department departs from its usual practice of presenting an assortment of good ideas picked up at various fleet shops to show what one of COMMERCIAL CAR JOURNAL's correspondents saw at the Salt Lake City Maintenance plant of the Pacific Intermountain Express on a recent regular visit of western fleets. P.I.E.'s C. L. Jacobsen showed our correspondent so many good, practical shop equipment and maintenance ideas that CCJ readers will be served best by presenting all at one time, rather than distribute them over several issues.

P.I.E.'s Terminal Shop

Aerial view of Pacific Intermountain Express' Salt Lake City terminal, shop, and general office building. First entrance at right is the 90-ft service lane. Office building is at left of shop.

Exhaust Removal System

P.I.E.'s diesel exhaust removal system. Hood on ceiling runs full length of 90-ft service lane with suction fans mounted on roof. Hood is 3 ft wide at bottom and mounted 11 ft from the floor.





Gasket Case

A gasket case and parts bin, containing fast moving, frequently needed small parts and an assortment of gaskets, is placed in the service lane to expedite work and cut down trips to the stockroom.

(TURN TO PAGE 100, PLEASE)

FEDERAL NOW OFFERS YOU...

34 POWERFUL DIESELS



A SURE SOLUTION TO YOUR HEAVY HAULING PROBLEMS

Here's a sure way to keep ahead of your costs . . . switch to powerful, heavy-duty Federal Diesel Trucks now. You'll get peak operating economy . . . fuel savings up to 50 per cent . . . greater power . . . bigger payloads. These statements are backed by every time-proven feature that makes for maximum truck operating efficiency . . . plus years of experience and "know how" in the building of powerful trucks for heavy-duty service.

Federal's broad range of Diesels will match your toughest on-or-off the road hauling job. They are designed to do the job better, at less cost per mile. Get all of the facts from your Federal dealer. They will convince you that Federal Diesels are today's outstanding truck value.

Federals Have Won . . . By costing less to run

Look TO FEDERAL FOR BETTER SERVICE
OVER 425 TRUCK COMBINATIONS
from 3/4 to 35 tons including six-wheelers
GASOLINE or DIESEL

TEAR OFF THIS COUPON AND MAIL TODAY!

Federal Motor Truck Company
Dept. No. C.C., Detroit, Michigan, U.S.A.
I'm interested in having complete information about Federal Diesel Trucks.

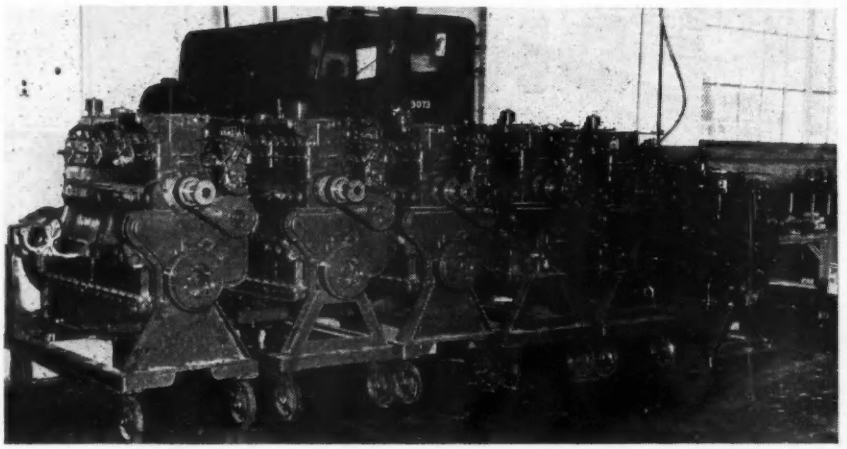
Name .....
Company .....
Address .....
City ..... State .....

GASOLINE • DIESEL
FEDERAL TRUCKS
Since 1910
FEDERAL MOTOR TRUCK CO.
DETROIT 2, MICHIGAN, U.S.A.

Scrapbook

of Practical Fleet Practices

Continued from Page 98



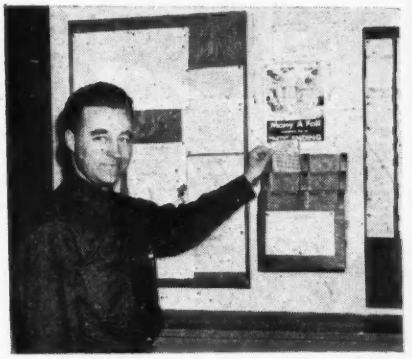
Engine Stands

P.I.E.'s own-built engine stands. Made of 2-in angle iron and equipped with 8-in rubber-tired wheels, they take an engine when it is removed from the chassis and stay with it, through all operations, until it is replaced.

Welding Curtain

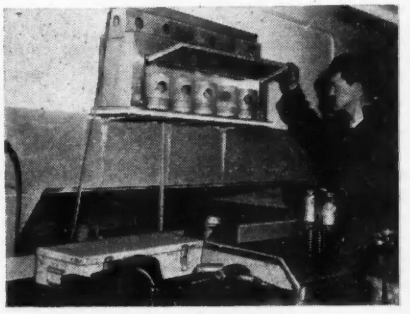
To prevent sparks and light flashes from disturbing nearby workers, P.I.E. uses this black, fireproofed canvas curtain. It is hung from the ceiling on a ¾-in pipe 9 ft from the floor and encircles the 10 x 12-ft area.





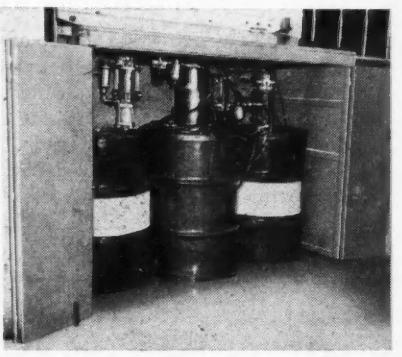
Maintenance Control

Units in for maintenance are assigned to the different shop divisions by card transfer from the general file at right to the division pockets at left. That's C. L. Jacobsen at the board checking over the jobs going through the shop.



Heat Cabinet

Before installing wrist pins, P.I.E. heats aluminum pistons in this infra-red heat cabinet. The cabinet holds six pistons, one piston under each light. It requires only 5 minutes to heat piston to point where wrist pins slip in easily.



Lube Cabinet

P.I.E. keeps its supply of lubricants in a dust-proof cabinet to prevent contamination. This cabinet, located right on the service lane, holds three barrels—one each of engine oil, chassis grease and gear lubricant. By attaching an air pump to the barrel, oil or grease is delivered to point of use without chance of contamination.

Money-Saving Planetary Gearing is Available only on

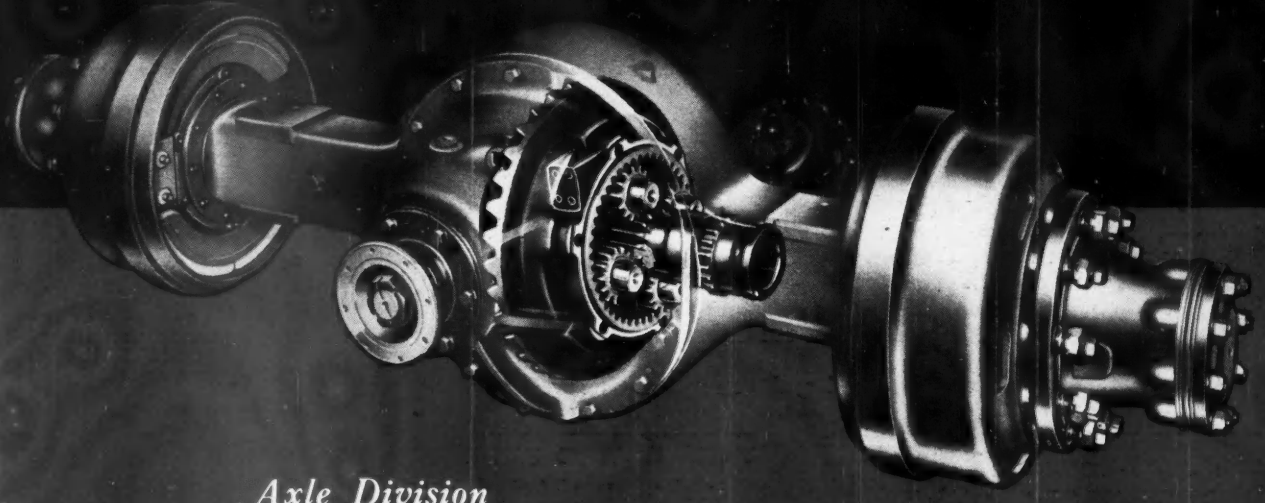
EATON

2-Speed Truck

AXLES

Eaton's exclusive planetary gearing distributes gear-tooth load, reduces stress and wear on gears and bearings, adds thousands of miles to axle life, holds maintenance costs to a minimum. Slower planetary gear movement makes for easy shifting and silent operation. Available for most trucks of the 1½-ton class and larger, Eaton 2-Speed Axles give extra pulling power combined with high speed; save time, fuel, oil, and engine wear. *They more than pay for themselves.* Ask for a road demonstration . . see the Eaton advantages for yourself.

More Than a Million Eaton 2-Speed Axles in Trucks Today



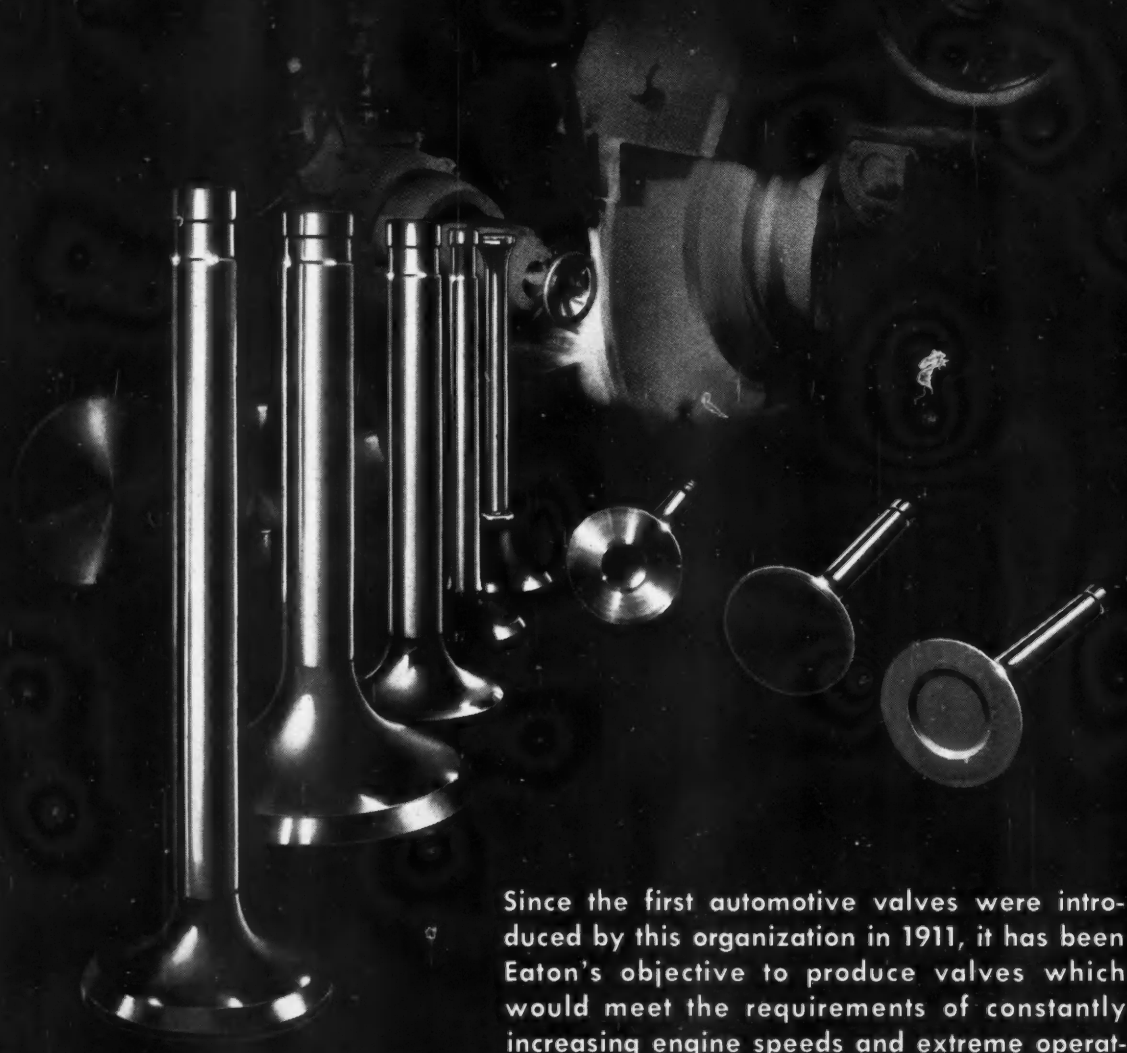
Axle Division

EATON MANUFACTURING COMPANY

CLEVELAND, OHIO

PRODUCTS: SODIUM COOLED, POPPET, AND FREE VALVES • TAPPETS • HYDRAULIC VALVE LIFTERS • VALVE SEAT INSERTS • ROTOR PUMPS • MOTOR TRUCK AXLES • PERMANENT MOLD GRAY IRON CASTINGS • HEATER-DEFROSTER UNITS • SNAP RINGS • SPRINGTITES SPRING WASHERS • COLD DRAWN STEEL • STAMPINGS • LEAF AND COIL SPRINGS • DYNAMATIC DRIVES, BRAKES, DYNAMOMETERS

EATON VALVE DEVELOPMENT has Contributed to Higher Efficiency and Longer Life for Engines in Every Type of Service



Since the first automotive valves were introduced by this organization in 1911, it has been Eaton's objective to produce valves which would meet the requirements of constantly increasing engine speeds and extreme operating temperatures. Eaton's development of the sodium cooled valve in 1923 represents one of the most important single advancements in the history of aviation. Applying the sodium cooled principle to automotive use, Eaton is contributing thousands of miles of additional life to valves in heavy duty truck and bus service. Equally important advancements have been made in valves for passenger car use—valves which deliver a hundred thousand miles and more of dependable service.

EATON
MANUFACTURING COMPANY
VALVE DIVISION
9771 French Road • Detroit 13, Michigan

C. C. J. Newscast

(CONTINUED FROM PAGE 35)

fundamental problems. Declared the chairman: "What we want to know is why railroad management does not concentrate on hauling freight which is natural for rails and stop screaming about freight which they cannot haul as efficiently as trucks."

According to sources close to the trucking interests, this latest move stems from defeat in last year's session of the legislature of a measure to raise the maximum allowable weight of 45,000 lb to 60,000 lb, an issue against which much pressure was brought by the railroads.

INDUSTRIAL NOTES

B. F. Goodrich Co. has developed a method for building tires of nylon cord without use of restricting cross threads for cord-spacing which will permit rythmical flexing of cords under stresses and road shocks . . . **Automotive Service Industry** is the new name approved by the National Standard Parts Association Board for Aftermarket, the multi-billion dollar business of servicing and maintaining the nation's 41 million cars, trucks, buses and tractors . . . **General Motors** soon will start construction of a diesel-electric locomotive plant in Canada . . . A new assembly plant of **Willys-Overland** in Bombay will enable India to assemble over 10,000 Jeep c[illegible] and trucks yearly . . .

B. F. Goodri[illegible] Co. has started production of tubel[illegible] tires at its Los Angeles plant . . . Pl[illegible]c Tolex developed by **Textileather[illegible]p.**, Toledo, Ohio is being widely used [illegible] interior trim on the 1950 Studebakers.

1949 Truck Trailer Production*

	June	Six Months
Vans:		
Insulated and refrigerated	250	1,140
Furniture	74	229
All other closed top	1,184	5,995
Open top	67	707
Total Vans	1,575	8,071
Platforms:		
With cattle and stake racks	75	376
With grain bodies	32	133
All other	389	2,814
Total Platforms	476	3,323
Tanks:		
Petroleum	173	1,025
All other		
Total Tanks	173	1,025
Pole and Logging:		
Single Axle	50	410
Tandem Axle	44	422
Total	94	832
Low-bed heavy haulers	170	796
Dump trailers	38	206
All other trailers	160	1,019
Total Complete Trailers	2,686	15,272
Trailer Chassis	131	754
Total Trailers and Chassis	2,817	16,026

* Industry Division, Bureau of the Census.

SLOWGAN

Slack up before your crack up.

1949 Domestic Truck Factory Sales by Gross Vehicle Weights*

	5000 lb. and less	5001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
January	31,918	25,697	8,171	17,451	4,047	2,708	1,290	91,282
February	32,799	25,543	8,155	16,057	2,855	1,839	1,292	88,540
March	39,769	28,082	8,790	17,838	2,364	1,654	1,428	99,925
April	40,568	25,068	7,440	13,909	1,926	1,590	1,307	91,808
May	33,805	19,931	4,779	12,159	2,294	1,327	1,223	75,518
June	43,655	23,572	5,242	12,031	2,110	1,417	1,147	89,174
Six Months, 1949	222,514	147,893	42,577	89,445	15,596	10,535	7,687	536,247
Six Months, 1948	223,375	109,647	81,150	116,998	36,017	23,697	10,845	601,929

*—Data from Automobile Manufacturers Association.

The Los Angeles headquarters of **J. T. Jenkins Co.**, distributors of Kenworth trucks in California, Nevada, Arizona and New Mexico have been moved to 2160 East 25th St. . . **Bartlett Trailer Corp.** of Chicago, now has in production all-aluminum trailers which are said to increase

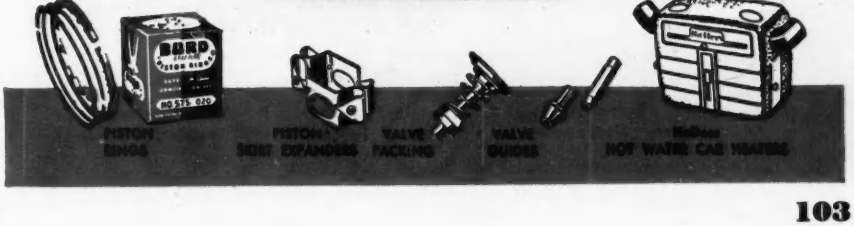
(TURN TO PAGE 104, PLEASE)



Give all re-ring jobs the Burd 1-2-3 treatment with "Super Hi-Speed" Oil Rings. Well nigh perfect oil control is gained by the exceptional flexibility of the cast iron ring, plus the firm, even pressure of the ventilated steel expander. You are assured uniform cylinder wall contact, regardless of wear. Now add the smooth wiping action of the two steel segments, installed *below* the cast ring, and you have full oil control . . . *without excessive wear.* Give every re-ring job the Burd 1-2-3 treatment for new-car performance at minimum overhauling costs. Get Burd "Super Hi-Speed" Oil Rings in "Engineered for Results" combination set from your Burd jobber.

BURD PISTON RING CO. **ROCKFORD, ILLINOIS**

BURD AUTOMOTIVE PRODUCTS



C. C. J. Newscast

CONTINUED FROM PAGE 103

payloads from 2500 to 3000 lb. . . **Willys-Overland** has started production of a four-wheel drive steel station wagon, produced exclusively for the U.S. Army last year, and plans distribution for civilian use by October . . . **Studebaker Corp.** has completed expansion and modernization of six parts and accessories warehouses and has five others under construction in various parts of the nation . . . **General Motors** with over 400,000 employees, has reached a new peace time peak of employment . . . **Motorola, Inc.** has hired over 1000 additional workers bringing the total to 4500, the highest number of radio and T-V employes in the firm's history.

LANDWRITING FOR STUDEBAKER

Studebaker's traffic safety specialists, Harry Hartz, is off on another "landwriting" tour, this time an 8,000-mile journey extending from Puget Sound to the Great Lakes. Over a combination of highways beginning in Portland, Ore., and ending at Green Bay, Wis., he is writing the words "Be Courteous," plainly readable when his course has been traced out on a map.



JOBS FOR 5.5 MILLION

Over 5.5 million wage earners are associated with the nation's truck industry, which next to agriculture is the most extensive occupational reservoir, according to the new edition of Motor Truck Facts, the Automobile Manufacturer's Association's biennial booklet.

About 89 per cent of agricultural products marketed roll by truck as well as 69 per cent of the cattle delivered to markets, 74 per cent of the hogs, 73 per cent of the calves and 42 per cent of the sheep and lambs.

ROAD-BUILDING STILL LAGS

Road and street construction, although increasing since the war's end, still lags far below pre-war levels, says Automobile Facts and Figures, yearbook of the Automobile Manufacturers Association.

Construction last year was 82 per cent of that in 1939 and only 55 per cent of the nation's peak in 1930-31. Total road and street costs reached a new peak of $3.1 billion last year.

ASK SAFER LOADING OF STEEL

Avoiding overloads and better load securing make up a new safety formula developed during a two-day conference of steel haulers in Cleveland.

Operators and shippers have been asked not to load trucks in excess of 125 per cent of truck manufacturer's recommendation for maximum size tire carrying capacity and restrict trailer loading to 135 per cent of this tire carrying capacity. Trucks and trailers would be lettered with maximum capacity as a guide to drivers and loaders.

Improved means of load securing can be obtained by equipping trucks and full trailers with three chains and semi-trailers with four, the conference agreed.

(TURN TO PAGE 132, PLEASE)

Sand-Slag for Road Surface



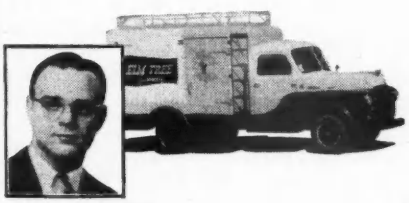
A new road surfacing material containing powdered rubber in an experiment designed to reduce skid hazards on asphaltic pavement is tested by Ohio state highway department engineers near Akron. Known as sand-slag, the material is a finely-ground common slag. Mixed with rubber, it is spread ⅛ to ¼ in. thick. Synthetic rubber furnished by Goodyear Tire & Rubber Company is being used in the tests. When spread on the highway the new mixture forms a slightly abrasive surface, believed just rough enough to permit cars to stop suddenly without skidding.



LS "FUNCTIONAL SKIN" CONSTRUCTION

Pays Dividends Year After Year After Year

The Men Who Know Truck Bodies Manufacture with Lindsay Structure



In Appleton—
Ask M. W. Buesing, Auto Body Works, Inc., Appleton, Wisconsin, a leading body manufacturer who specializes in the use of Lindsay Structure for truck bodies.

Anywhere in the U. S.—
Ask the Progressive Builders

You can be sure to find near you a body builder who uses Lindsay Structure. There are over 200 qualified body builders who are specialists in the use of Lindsay Structure for truck bodies.

"This Lindsay unit has been in constant daily service for the past ten years, and maintenance costs have been surprisingly small. Our bodies are painted every two years, and the 11-year old Lindsay Body, now on its second chassis, looks as good as new, today," says Mr. Henry Bresler, Bresler Ice Cream Co., formerly Paradise Ice Cream, Chicago, Illinois.

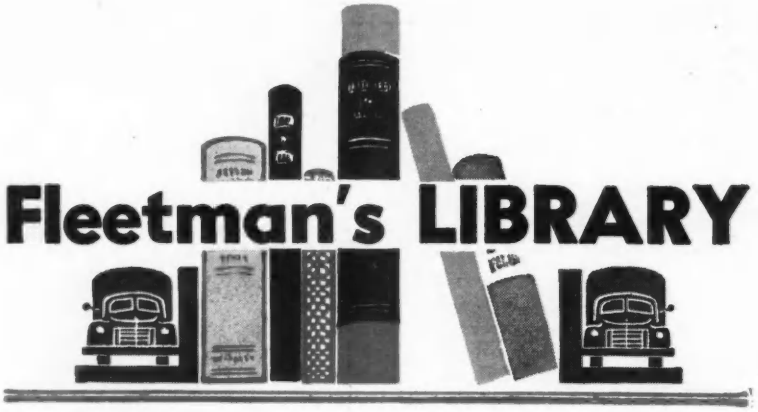
An over-all investment in a truck body built of Lindsay Structure will repay you many times in its long life, strength, and appearance. Maintenance is low—Year After Year After Year.

Another advantage—there is a truck body manufacturer in your area who specializes in Lindsay Structure. If your body manufacturer is not a user of Lindsay Structure, write for name of truck body manufacturer nearest you who uses LS.

LINDSAY The Lindsay Corporation, 1724 25th Ave. Melrose Park, Ill.

LS STRUCTURE

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents and Patents Pending



DAVISBILT PRODUCTS CATALOG, containing 66 pages describing and illustrating the complete line of Davisbilt fluid carriers. For copies, write E. H. Malden, Davisbilt Products Co., 1110 Richmond St., Cincinnati 3, Ohio.

AUTOMOTIVE TRANSPORTATION TRENDS AND PROBLEMS, a 154-page book, covers transportation and service cost trends, evolution of highway problems, technological developments in the vehicle, highway management and economics of highway modernization. Price is $2.00, and copies can be secured from The Brookings Institution, 722 Jackson Place, Washington 6, D. C.

UNITED STATES GOVERNMENT ORGANIZATION MANUAL contains 725 pages describing agencies in the legislative, judicial and executive branches. Of particular interest is a section which lists agencies abolished or transferred since March 4, 1933. Price is $1.00. Copies can be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

AMERICAN STANDARD LETTER SYMBOLS for GEAR ENGINEERING is a new edition for use in mathematical equations and formulas that deal with toothed gearing. It was prepared by the sectional committee on standardization of gears and sponsored by the American Gear Manufacturers Association. Copies are priced at 30 cents each and can be procured from the American Standards Association, 70 East 45th St., New York 17, N. Y.

TOWMOTOR JOB STUDY No. 84 covers material-handling problems and use of fork lift truck accessories. Towmotor Corp., 1226 East 152nd St., Cleveland 10, Ohio.

INTERNATIONAL PARTS CATALOG is an automotive encyclopedia of nearly 700 pages covering mufflers, exhaust pipes, tail pipes, clamps, brackets and bushings associated with muffler assembly.

MORSE CHAIN CATALOG, 16 pages describing flexible chain couplings as well as information on dimensions, hp ratings, stock and maximum bores together with illustrations. For a copy write Morse Chain Co., 7601 Central, Detroit 8, Mich.

UNIFIED SCREW THREAD STANDARDS, CIRCULAR 497, contains 27 pages of tables, figures and illustrations on thread standard unification of American, British and Canadian systems. Copies are 30 cents each and can be obtained from the U. S. Government Printing Office.

RUSTREM, a bulletin describing over 1000 uses for this anti-rust paint, can be procured from Speco, Inc., Cleveland, Ohio.

BATTERY SELECTOR BULLETIN, GB-1055, a guide for selecting correct batteries for industrial trucks. This eight-page catalog contains specifications for almost 100 diffent size and capacity batteries.

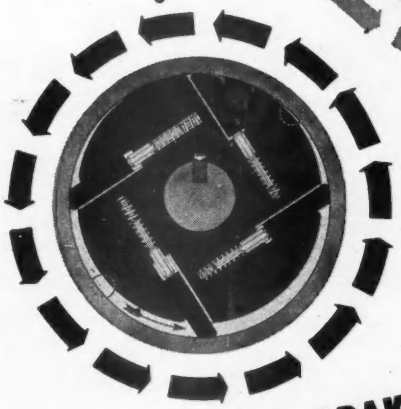
MOTOR CARRIER EQUIPMENT FINANCING, revised edition, dealing with financing problems in the trucking industry, credit sources and proper budgets. American Trucking Associations, Inc., 1424 16th St., N.W., Washington 6, D. C.

ALUMINUM STAMPINGS BROCHURE, a two-color catalog describing light weight stampings and assemblies. Reynolds Metals Co., Industrial Parts Div., Louisville, Ky.



You're right... WHEN YOU INSTALL

Wagner *Air Brakes*





1 THE ONLY AIR BRAKE WITH THE ROTARY COMPRESSOR

Wagner Air Brake Systems are the only systems that have the Rotary Air Compressor. Check these features: Rotary motion of all moving parts . . . In running balance at all times . . . Longer belt life due to more uniform torque loading . . . Low friction losses—therefore high operating efficiency . . . A predetermined air pressure range automatically maintained . . . Operating parts are lightly stressed insuring long life and low maintenance . . . *Extremely quiet in operation* . . . Self-contained oiling system—uncontaminated by engine waste products . . . Compact — requires minimum installation space . . . Low operating temperature prevents carbon formation in compressor and delivery lines . . . Adaptable to all types of automotive braking systems.

2 NATIONWIDE SERVICE FACILITIES

When you equip your vehicles with Wagner Air Brakes, maintenance is no problem—First, they require less maintenance than ordinary air brakes because of such outstanding engineering achievements as the Wagner Rotary Compressor and the Wagner Power Cluster. Second, when maintenance is necessary it can be handled quickly and economically.

Nationally serviced by Wagner's 25 branches and a network of authorized distributors. Manned by factory-trained air brake repair experts, they can give you quick service and get your vehicles back on the highways in minimum time. Wagner also furnishes factory-rebuilt units and unit repair parts kits for fleet operators who prefer to do their own repair work. They are available from Wagner Distributors or any of the Wagner Service Branches.

Cut Your Brake Maintenance Costs • Increase Your Pay Load Profits • Write For Bulletin KU-50B *Today*

Wagner Electric Corporation

6470 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.

Wagner Electric Corporation EST. 1891

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID · ReRoK CoMoX BRAKE LINING · AIR BRAKES · TACHOGRAPHS ELECTRIC MOTORS · TRANSFORMERS · INDUSTRIAL BRAKES

The System With The Rotary Compressor

Service Exchange Units are available at all Wagner Branches

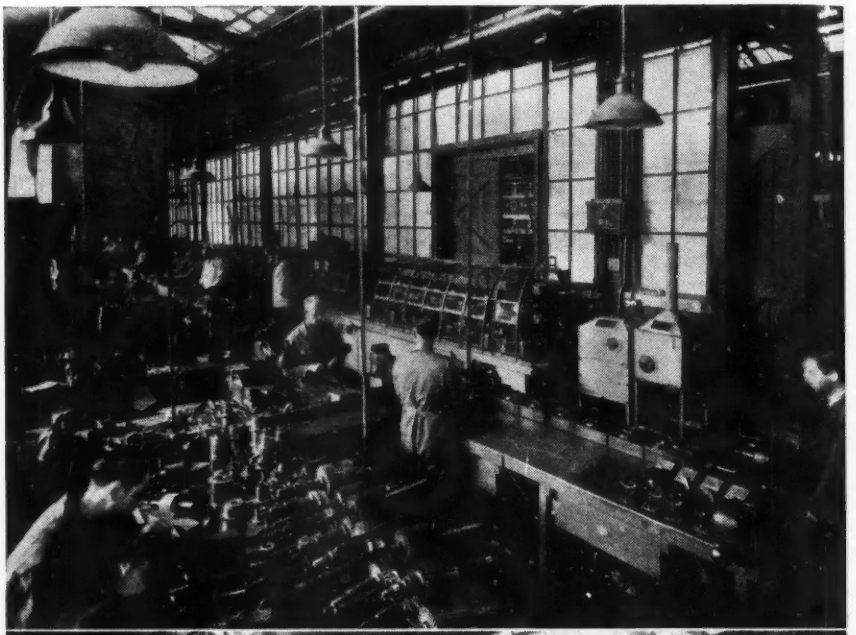
K49-7

WORLD'S LARGEST BUS FLEET . . .

Continued from Page 71

UPPER illustration shows one of the several departments in the Chiswick Works devoted to specialized repairs. Here such electrical parts as generators, starters, and magnetos are rebuilt and tested

LOWER illustration shows the fuel pump repair shop. In the foreground can be seen a number of diesel engine fuel pumps completely rebuilt and ready for use





quality of work done and for new material delivered from suppliers. It is regarded as the technical link between the production shops and the Planning & Methods, and Development departments. The Inspection Department is organized into three sections: Factory inspection, measurements, and interchangeability.

REPAIR DEPARTMENT — Work in the Central Repair Works is divided into two main categories: The overhaul and repair of parts and component units changed at the operating garages, and the repair and rehabilitation of the vehicle structure as a whole.

The majority of parts and component units needing repairs are changed, when required, at the operating garages and delivered to the Central Repair Works. This creates a great mass of material always moving to and from the Central Repair Works and the operating garages. The volume of this work is sufficiently great to permit mass production repair methods.

All work is subdivided into departments so that the repair of such units as fuel injection pumps, electrical control gear, transmissions, etc., is handled by skilled mechanics specializing in those repairs. Each department is equipped with all necessary tools and instruments to do a factory-like job. All possible aids that contribute to the reduction of personal fatigue of the worker, and to the speed and efficiency of jobs passing through the Central Repair Works, are employed.

Overhauls Every 2½ Years

THE London Transport Executive has established a rigid policy that each bus, regardless of its apparent condition, must undergo a complete overhaul every 2½ years.

When a bus comes in for its periodic overhaul, the body is removed from the chassis. This takes 15 minutes. The body then is passed along to the nearby body shop, while the chassis continues its course on a moving platform to the other departments where it will be dealt with piecemeal.

The engine then is dismounted from the chassis and passed along on a moving belt to the engine repair department, while the chassis continues along the moving platform.

The stripped engine and chassis parts are sprayed or dipped in a boiling caustic detergent solution for 8 minutes. Twelve inspectors examine the engine and chassis parts after the caustic soda treatment and note their condition by means of a colored

(TURN TO PAGE 110, PLEASE)



It's the talk of the Industry . . .

THE NEW KIND OF TRUCK ALL AMERICA IS TALKING ABOUT!

THE NEW WHITE 3000 makes a hit . . . wherever it goes! Not only because it *looks* like a "dream of a truck" . . . but because it's a time- and cost-saving, precision tool of transportation. When the members of the American Trucking Associations, Inc., meet in Boston in October, they'll be talking about the revolutionary new features of the White 3000.

On the job, the White 3000 permits substantial increases in payload . . . has new roadability and maneuverability. Saves running and unloading time. It saves hundreds of dollars a year in maintenance time costs because of its perfect front-end accessibility. All the quality and proved dependability of White Super Power truck units are built into the White 3000 for longer life. See your local White Representative for all the facts about the White 3000 that *costs less, earns more* . . . year after year.

THE WHITE MOTOR COMPANY • ***Cleveland 1, Ohio, U.S.A.***

THE WHITE MOTOR COMPANY OF CANADA LIMITED • *Factory at Montreal*



FOR 50 YEARS THE GREATEST NAME IN TRUCKS

White SUPER POWER 3000

Tips its cab to service

Bus Fleet . . .

Continued from Page 108

mark. A green mark means that the part is O.K. A blue mark signifies that the part needs repair. A red mark means the part is condemned, and not to be used.

Repairs to the chassis frame are made while the frame is moving in the conveyors. Conveyor speeds vary from 10 in. to 16 in. per minute.

All work on the engine is so arranged that the related parts get the required reconditioning, and are subsequently mated and passed on for final assembly. The necessary reconditioning equipment is arranged in batteries. For cylinder reboring, for example, the block is passed on to an area containing a number of cylinder reborers so that the work may be handled without delay.

As an example of the mass production methods, valve grinding is handled at the rate of 12 valves in 32 minutes.

ENGINE TEST HOUSE—As each engine is reassembled, it is tested under load for 8 hours. Incidentally, the engine test stands are connected to generators producing electric power which is synchronized with the plant power supply.

While the engine has been undergoing its reconditioning and testing the other units also were given similar, thorough rebuilding and testing. Transmission gears, for example, are operated in a "silent room" to make sure that they will not be unduly noisy in actual service.

Following a straight line of progression, the various units come together in the Reassembly Shop, before the engine goes into the Engine Test House.

BODY REPAIRS AND PAINTING—All body work is handled in the Body Builders Shop for basic repairs. After the repairs have been completed, the bodies are painted in a dustless room. Following the painting operation, the bodies are varnished and dried.

UPHOLSTERY — Adjacent to the Body Shop is the Upholstery Department. As in all other departments, work proceeds on a moving belt. Special equipment is used to clean the upholstery, which is mechanically pummelled to release the dust, which is extracted by a suction fan. After this treatment, the upholstery continues along the moving belt, and goes into a dry cleaning machine.

Continuing onward, the body meets the main production stream. Here it is mechanically lifted on to the chassis which awaits it—complete with reconditioned engine, transmission, and other parts. The reassembly is completed and the reconditioned vehicle is ready for final inspection.

From the foregoing description of a typical bus reconditioning procedure, a great similarity can be noted between the Chiswick Works' production methods and new bus manufacturing production methods. It is, in effect, a complete industry under one roof. The steady output of reconditioned buses at the Chiswick Works averages 26 per week. In addition, thousands of parts, spare units and components are reconditioned so that the 49,000 parts supply bins always are able to supply all the needs of this, reputedly, the world's largest bus fleet.

END

(Please resume your reading on P. 72)



they're here

AIRCO'S new small cylinders

Yours for leasing for 25 years (estimated lifetime) at average cost of $2.00 per year

Here, at last, is the ideal cylinder team to meet every day welding and cutting operations — a 122 ft. oxygen cylinder teamed with a 60 ft. acetylene cylinder. This combination gives you

THESE 4 BIG ADVANTAGES

1. **Better Gas Ratio** — meets the common demand for 2 to 1 oxygen-acetylene ratio.
2. **Easier Handling** — small, lightweight cylinders easy to move around the shop . . . or on your truck for field welding jobs.
3. **Greater Economy** — your savings on demurrage can amount to $5.20 or more per year. Airco makes ordinary wear and tear repairs and retests these cylinders at no charge to you.
4. **Always Available** — and when your cylinders are empty, you get a pair of full ones immediately . . . no valuable time lost waiting for cylinders to be filled.

Moreover, if you move your place of business, one of Airco's nation-wide network of dealers and plants will always be near to service your small cylinders.



Ask your local authorized Airco Dealer about the 25-year lease plan on these small gas cylinders. Also ask him about his complete line of gas and arc welding equipment and supplies that he can deliver immediately from stock. Do it now! Call him today.

AUTHORIZED AIRCO DEALER

This Emblem identifies your Airco Dealer

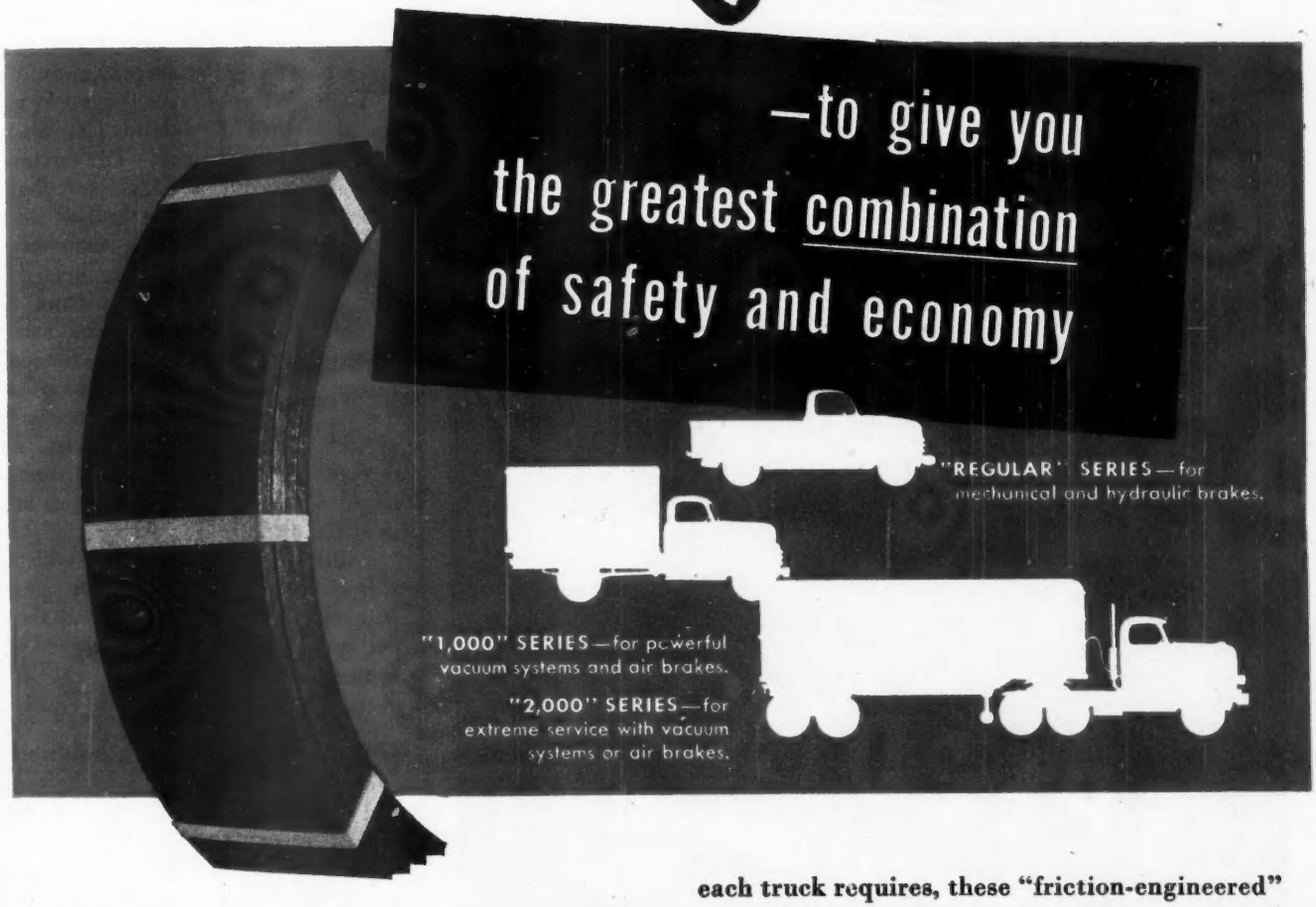
AIR REDUCTION

Offices in Principal Cities

Plus a Nationwide Dealer Organization

Headquarters for Oxygen, Acetylene and Other Gases . . . Calcium Carbide . . . Gas Cutting Machines . . . Gas Welding and Cutting Apparatus, and Supplies . . . Arc Welders, Electrodes, and Accessories

"Friction-Engineered"



● To deliver safe, smooth stops and long service-life—both at the same time—brake lining must meet *all* the requirements of the truck on which it is installed. Naturally, no *one* coefficient of friction can do the job on *all* trucks.

That's why American Brakeblok makes brake linings for trucks in three distinct series—and "friction-engineers" every axle group for the specific *braking system* on which you install it.

By providing the *exact* friction and wear qualities each truck requires, these "friction-engineered" groups assure the greatest combination of safety and economy. Try them on your trucks. Give your jobber complete information on your vehicles, and he'll supply you with "friction-engineered" groups or sets exactly right for every unit.

American Brakeblok is distributed through 38 NAPA Warehouses, helping NAPA Jobbers everywhere give prompt, complete service.

American Brakeblok
REG. U.S. PAT. OFF.
BRAKE LINING

AMERICAN Brake Shoe COMPANY

AMERICAN BRAKEBLOK DIVISION
DETROIT 9, MICHIGAN

High Gloss on the "Flyin' Hoss"

Continued from Page 69

Washed and Polished Regularly

OUR schedule for washing and polishing trucks varies with geographical areas, season and local weather conditions. Generally speaking they are washed every week and polished every two weeks. However, daily washing is not uncommon when weather and road conditions require it.

For washing trucks we use two types of cleaner. To loosen and dissolve the grease and road oil from the engine and under side of the truck, we use an all purpose cleaner mixed with kerosene. This mixture is applied from a tank under 50 lb pressure. The washroom also is equipped with a car shampoo system in which air, water and shampoo spray are combined. After applying the all purpose cleaner mixture, we use a water spray alone with about 140 lb air pressure behind it. The operation is fast and simple, and leaves the truck chassis and undergear clean.

To wash the body of the truck, we use a mixture of Sovasuds Car Wash in the shampoo system. The mixture is applied with a 11-in. soft hair brush equipped with a hollow steel handle which can be fastened to a water hose. The brush loosens the dirt while the cleaning mixture is being applied. We use the same brush, with clear water, for rinsing. Either hot or cold water may be used, depending upon preference and availability but, in many cases, as determined by local weather conditions. Chamois or turkish towels are used for drying.

Polish is applied, rubbed with a soft cloth until a satisfactory gloss is obtained. Chrome trim is then polished and the truck is returned to service.

Four Men on a Washrack

FOUR men work on a washrack at one time, rotating jobs by mutual agreement. Some idea of the time required for washing is evidenced by the fact that, in a single 8-hour shift, a total of about 10 tank trucks (3000-5000 gal capacity) will be completed. Polishing times are roughly the same as for washing.

In some of the smaller terminals two man crews are used. In no case are special qualifications required in hiring such personnel. Both washing and polishing may be day or night operations, depending upon terminal facilities and operating schedules.

A more recent development is the use of a shield device mounted on the front of each truck, and centered directly above the windshield. The shield shows a flying red horse (in color) on a white background. From a distance, head-on, only a white spot is visible suggesting the eventual public awareness of General Petroleum's "White Spot" fleet. It is another example of making the most effective use of the trucks as an advertising medium, particularly from the standpoint of product identification.

END

(Please resume your reading on P. 70)



SPEEDING UP, in order to report in on time, means the great danger of

ACCIDENTS!

But the *Servis Recorder* on a truck prevents that incentive to "step on it."

YOUR trucks will do less speeding when your drivers realize they can't "make up" lost time by "giving her the gas" and getting in on time. They know all delays will show up on the chart. That's how the *Servis Recorder* on a truck helps to prevent speeding—and accidents. It takes away the motive for speeding. That's why so many insurance companies recommend equipping fleets with Servis Recorders.

The whole story is told in our helpful Bulletin: "*How to Prevent Trucks from Speeding and Having Accidents.*" It's free. Send for it today. The Service Recorder Co., 1375 Euclid Ave., Cleveland 15, O.

"Making Up" Wasted Time Causes Most Speeding and Speeding Causes Most Accidents.



The Servis Recorder

Helps Prevent Speeding and Accidents

"THEY NEVER MISS ..!"

by Gum



Copyright 1949, Prest-O-Lite Battery Company, Inc.

Detour trouble with Hi-level...

THE sensational new Prest-O-Lite Hi-Level Battery gives you 3 times the protection against a major cause of battery failure . . . because Hi-Level needs water only 1/3 as often as batteries without the Hi-Level features. In addition, you get Fiberglas insulation for longer battery life. Sidestep trouble in your fleet by replacing with Hi-Level. See your distributor or write to

PREST-O-LITE BATTERY COMPANY, INC.
Toledo 1 **Ohio**



prest-o-lite
hi-level battery

... needs water only 1/3 as often!*

*As Batteries without the Hi-Level features

Exhaust Gas Analyzers

Continued from Page 90

states that these units rarely require servicing or replacing.

The D'Arsonval meter in a molded bakelite case indicates percentage of the fuel loss and air fuel ratio with three colored sections including lean, idle and rich. Figures on the dial marked Air-Fuel Ratio indicate the number of parts of air to one of gasoline, and the Percentage of Fuel Loss is also indicated. Meter dial is calibrated to indicate the per cent fuel loss which is a direct ratio of the carbon monoxide content of the exhaust gas.

This portable unit can be used with the Type G-100 Motor Tester, an instrument composed of several other testers for a complete engine tune-up. This instrument is manufactured by Electric Heat Control Co., Cleveland, Ohio.

Allen Electric

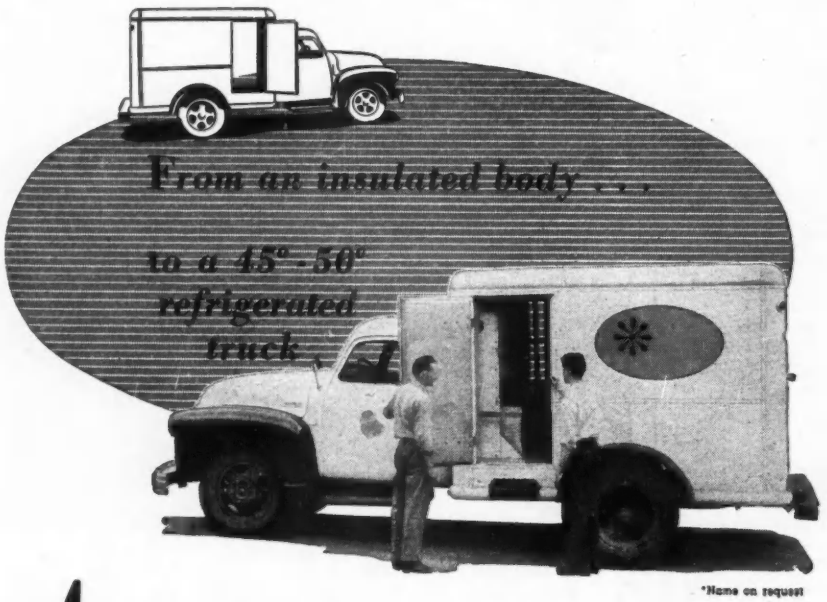
The Allen Model E-306 Combustion Analyzer provides a method of making carburetor adjustments using the Wheatstone Bridge Principle with a thermal conductivity cell for measuring air-fuel ratio. The analyzer operates from three 1.5 volt flashlight cells located in the analyzer case. Electrical connection is made between the tail pipe unit and the analyzer unit which makes road testing practical and permits accurate instantaneous readings. No ac supply or hose connections are necessary with this instrument.

Elimination of the hose to conduct the exhaust gas from the tail pipe to the analyzer and replacing it by electrical cable has eliminated the hazard or exhaust gases in the driving compartment when road testing and has reduced time necessary for changes in exhaust gas to register on the meter scale, the company states. Also, any number of engines can be tested in succession and accurate readings obtained without the necessity of removing and draining of an exhaust hose between the tests.

The meter scale on this analyzer measures air-fuel ratio and is calibrated from 11 to 14.7. While the carburetor may be set to supply the engine with a leaner mixture, and with some gasolines present day engines may perform successfully on a higher air-fuel ratio, this instrument can only measure percentage of complete combustion up to the point where all the oxygen in the air going through the carburetor is burned with all the gas mixed with it. It is stated that an instrument calibrated to indicate complete combustion in access of these figures would not accurately analyze the sample of exhaust gas.

The Allen analyzer is practically free from effects of velocity of the gas sample due to the fact that a diffusion chamber both cools the gas and removes excess water vapor. These instruments are made by Allen Electric and Equipment Co., Kalamazoo, Mich.

(TURN TO PAGE 116, PLEASE)



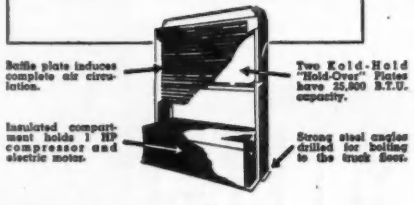
*Name on request

As simple as 1-2-3

with KOLD-HOLD'S new Pakage truck unit

Hi-temperature refrigeration of perishables is achieved quickly, easily and economically through the installation of the new "Pakage" truck unit. This unit is a completely self-contained refrigeration system which you can install (see right) in from two to three hours without special body work, holders or brackets. It works well in any properly insulated body, regardless of age and it maintains a 45° to 50° temperature throughout the longest day's deliveries. The unit recharges itself by simply plugging in to any 110V outlet. 220V motor is available if desired. Write for the "Pakage" truck unit bulletin for information.

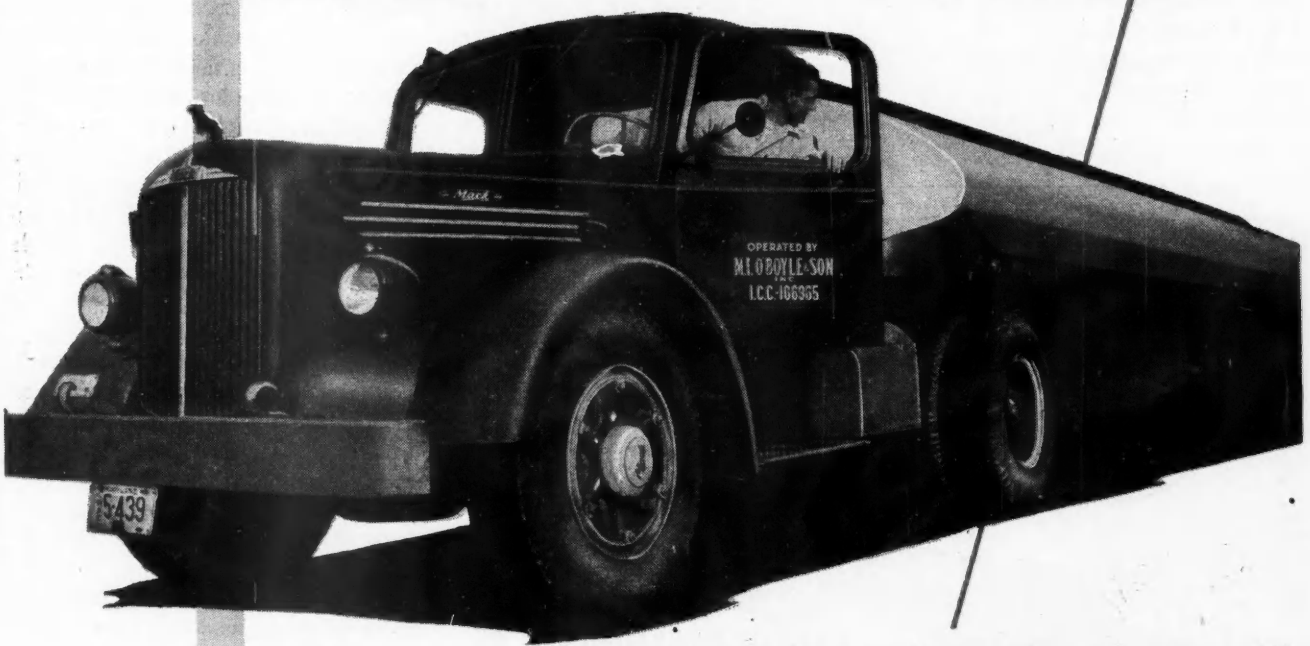
1. Cut two holes in the floor of the truck for air intake and discharge. Dimensions and measurements come with the unit, as well as complete installation instructions.
2. Push the unit into position over the holes and bolt securely into place. This is all the installation required.
3. Plug into 110V outlet. Twenty foot rubber covered cord is supplied with the unit. If desired, a connection box may be installed outside the body for greater convenience.



WRITE FOR THIS FREE LITERATURE!
Efficient Truck Refrigeration, "Pakage" Truck Unit, and separate bulletins on Truck Refrigeration for Meat, Milk, Ice Cream and Frozen Foods.

KOLD-HOLD
Jobbers in Principal Cities
PROCESSING · TRANSPORTATION · STORAGE
protects every step of the way
KOLD-HOLD MANUFACTURING CO. 620 E. Hazel St., Lansing 4, Michigan

"PROVED BEST BY EXPERIENCE WORLD BESTOS BRAKE BLOCKS"



"Longer Lining Life — Excellent Braking — No Squeal"

● O'Boyle Tank Lines of Washington, D. C. operate sixty tractor-trailer units through the territory neighboring on the nation's Capital. World Bestos users for over a decade, this company has standardized on World Bestos 3/4" Brake Blocks and Truck Sets.

"World Bestos brake linings have been proved best by long experience," says Mr. Frank Grimm, president of O'Boyle Tank Lines. "Our experience has been so good that for the past few years we have used no other lining. We get longer lining life, excellent braking, and no squeal—qualities for which World Bestos materials are outstanding."

Truckers everywhere are getting such performance when they call in World Bestos. Available in formulations for every operating demand, World Bestos materials wear slowly in even the most severe service while providing a stable, resilient friction under all operating heats and pressures. Constant, positive control is assured, with virtual freedom from fading, squealing, drum scoring or heat checking.

For first-hand proof of their performance, reline with a set of World Bestos Brake Blocks or Truck Sets and compare them to those you now use.



BRAKE LININGS — BRAKE BLOCKS

P438

WORLD BESTOS CORP.

NEW CASTLE, INDIANA

Exhaust Analyzers

Continued from Page 114

Sun Electric

The Sun Portable Combustion Tester consists of the following parts: The D'Arsonval Galvanometer measures the amount of combustion efficiency. The vacuum pump keeps the flow constant. The gas pickup gun is especially designed with special cooling fins, and it is attached to the unit with a 22-ft rubber hose.

The Sun tester operates on a thermal conductivity and heat transmission method. It is adaptable for fast and accurate results, improving engine economy, engine performance, engine life and maintenance.

Exhaust gas analysis is made possible by the use of an instrument employing the Wheatstone Bridge circuit. A 6-volt storage battery supplies electric current for both wires. This type of analysis can be made so sensitive that it will indicate a change of one one-hundredths per cent of the carbon dioxide in the air.

Dilution of the exhaust gas sample with air is a great hazard in making a correct analysis, for a small amount of air entering the system will give faulty results. The Sun tester is designed so that the dilution is impossible. There are no openings to the atmosphere from the point of gas collection to the point of analysis. The exhaust gas sample is cooled to room temperature before the analysis is made. The arrangement of tubes allows the even flow of exhaust sample entering and leaving the sample tube, irrespective of any variations in velocity, pressure or temperature of the exhaust sample itself.

The speed of obtaining readings is accomplished by employing the Wheatstone Bridge circuit by means of a motor driven suction fan which makes readings practically instantaneous as the gas sample leaves the exhaust stack. In this type of system no diffusion or purging can take place. The unit will respond immediately to any altered engine conditions. Developed by Sun Electric Corp. of Chicago.

Permutit

The Ranarex Gas Analyzer operates mechanically, taking advantage of the fact that CO_2 is heavier and hydrogen lighter than other gases in the engine exhaust. A motor and two fans are the basic operating mechanism.

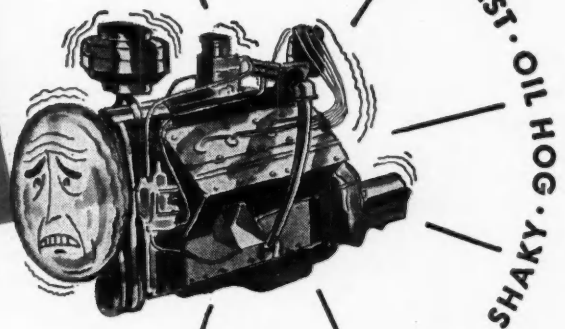
Exhaust gas is sucked into the gas chamber of the instrument by a revolving impeller which sets the gas sample into rotating motion. The rapidly rotating gas is propelled against the blades of an impulse wheel opposite the impeller. The substantial torque imparted to this impulse wheel immediately changes with every slightest change in the exhaust gas composition. If the air-fuel ratio decreases, the torque becomes smaller, due to the increasing proportion of light hydrogen. Conversely, if the air-fuel ratio increases, the torque becomes greater. A similar impulse wheel in a second chamber receives torque from air moved by a second impeller rotating in a direction opposite that of the first impeller.

Both impulse wheels, coupled to-

(TURN TO PAGE 118, PLEASE)



ENGINES like this



need...

PISTONS like this



Sluggish, inefficient engines can play hob with your schedules, cramp the earning power of your fleet. One good way to dodge this headache is to standardize on replacement pistons of ALCOA LO-EX.

They deliver smooth, quiet power because they fit correctly. Piston clearance is controlled by the special low-expansion alloy and modern flexible-skirt design. You get full compression, improved fuel economy. Engines run cool, because ALCOA LO-EX alloy conducts heat fast.

If an engine is worth pulling down, it's worth repowering with top-quality pistons. So, whatever aluminum pistons you buy, be sure they're trademarked ALCOA LO-EX—the name that identifies light, strong pistons, cast by Alcoa, finished by leading automotive suppliers. ALUMINUM COMPANY OF AMERICA, 1916J Gulf Bldg., Pittsburgh 19, Pa.

Make sure your replacement pistons are genuine ALCOA LO·EX!

ALCOA ALUMINUM

Aluminum Pistons of ALCOA LO·EX

Exhaust Analyzers

Continued from Page 116

gether and opposing each other, produce a resultant torque dependent upon the composition of the exhaust gas. The air-actuated impulse wheel compensates for varying temperature and atmospheric pressure automatically. A third factor, humidity, is automatically compensated by saturating both the engine exhaust gas and the air sample with moisture.

The resultant torque actuates, through suitable linkage, an indicating pointer which is deflected over a scale calibrated in terms of air-fuel ratio. If and as the exhaust gas composition in the gas chamber varies, the pointer is instantly deflected to indicate new reading.

This unit can be used in the vehicle on the road test to check exhaust gases. Developed by The Permutit Co., New York, N. Y.

Lanagan & Hoke

The Lanagan and Hoke Analyzer Model 113E is a unit which consists of a fuel analyzer with a pressure free cell, working on the CO_2 Wheatstone Bridge principle. The following conditions are shown on the dial: rich, idle, intermediate, high and lean. Cells are individually calibrated to 1 per cent to assure accuracy.

This instrument is a portable unit and can be used in conjunction with the Model 110E motor analyzer for testing completely the electrical as well as the fuel system. Lanagan and Hoke, Inc., Philadelphia, Pa.

Weidenhoff

The Weidenhoff Model C-801 Exhaust Gas Analyzer is of thermal conductivity type using the Wheatstone Bridge principle. Current is supplied by heavy-duty dry batteries so that the unit is portable and can be used for road testing.

A precision D'Arsonval (moving coil) type full scale needle movement eliminates dead or inactive portion of the meter scale. Color combinations on the dial show fuel conditions. An automatic condensation control protects the bridge from condensation and makes for accurate meter indications. The Wheatstone Bridge is completely enclosed in a metal cell to protect against leakage and to maintain a uniform temperature. Joseph Weidenhoff, Inc., Chicago.

Electro Analyzer

Model E combustion analyzer developed by Electro Products Co. makes a mixture check in three minutes, testing carburetor for rich, idle, average, lean, and accelerating pump discharge. This unit features a large, sensitive meter with three-colored dial. Analyzing cell operates on Wheatstone Bridge principle, providing fast response to mixture changes. Self-contained batteries are provided with this instrument, making it practical as either a shop or road testing device. A similar unit, Model EB, can be used for Butane-Propane as well as gasoline burning engines.

END

(Please resume your reading on P. 92)

SAFETY SADIE SAYS . . .

OH, CHANT A DIRGE
FOR BONEHEAD BLAKE
HE USED THE THROTTLE
NOT THE BRAKE.

UP YOUR PROFITS!

Speed heavy-duty carburetor repairs by giving your men the

Zenith Instruction Program

To increase your profit on heavy-duty carburetor repairs through faster, better work, Zenith distributors now offer a streamlined course of instruction by factory experts. It is short, thorough, well worthwhile. You'll find that faster, improved work plus the consistent use of efficient Zenith* Package Repair Kits will pay off in substantial profit gains. For details contact your Zenith distributor or the factory direct.

*REG. U.S. PAT. OFF.



ZENITH CARBURETOR
696 HART AVENUE • DETROIT 14, MICHIGAN

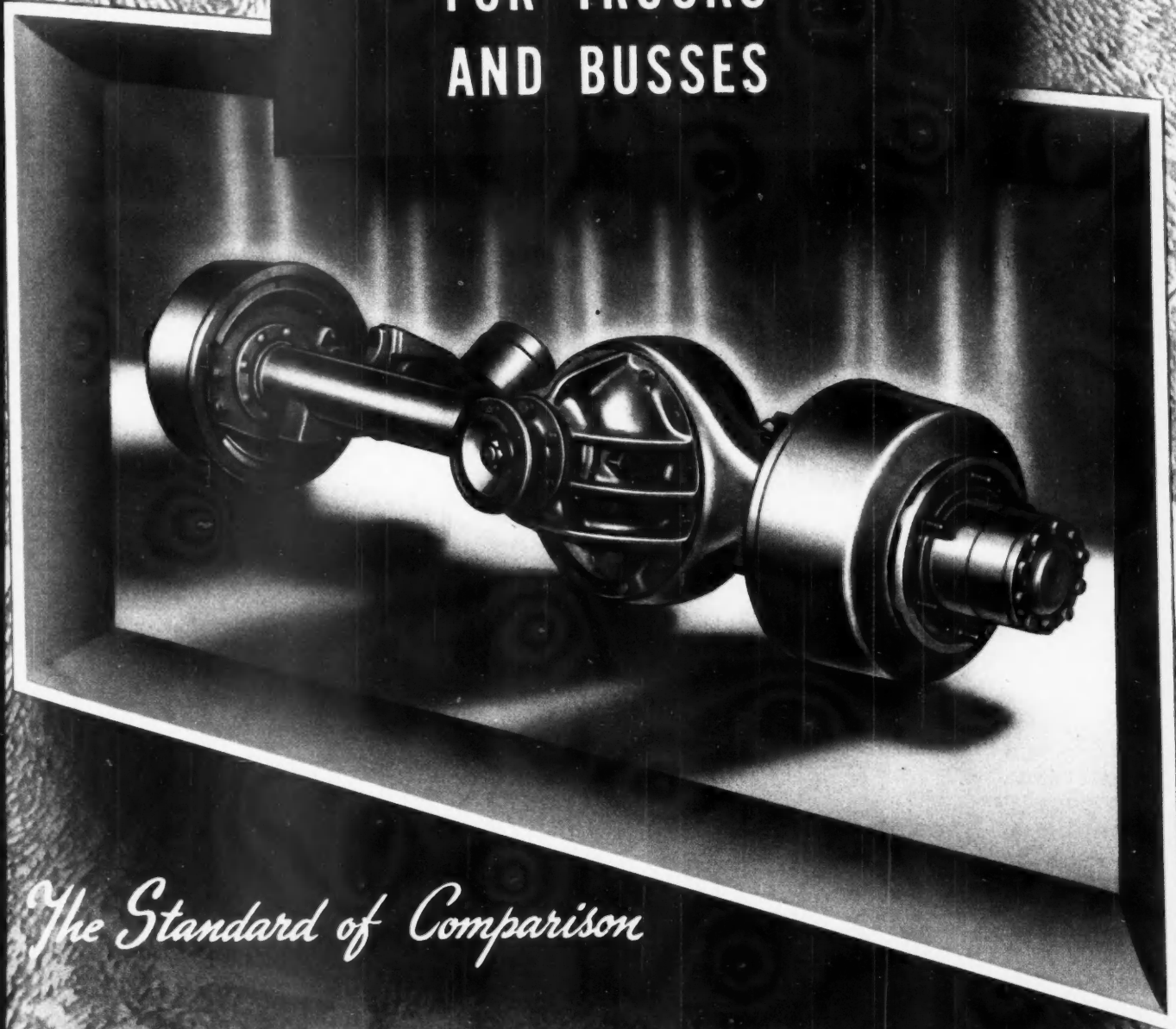
DIVISION OF Bendix AVIATION CORPORATION





CLARK AXLES

FOR TRUCKS AND BUSSES



The Standard of Comparison

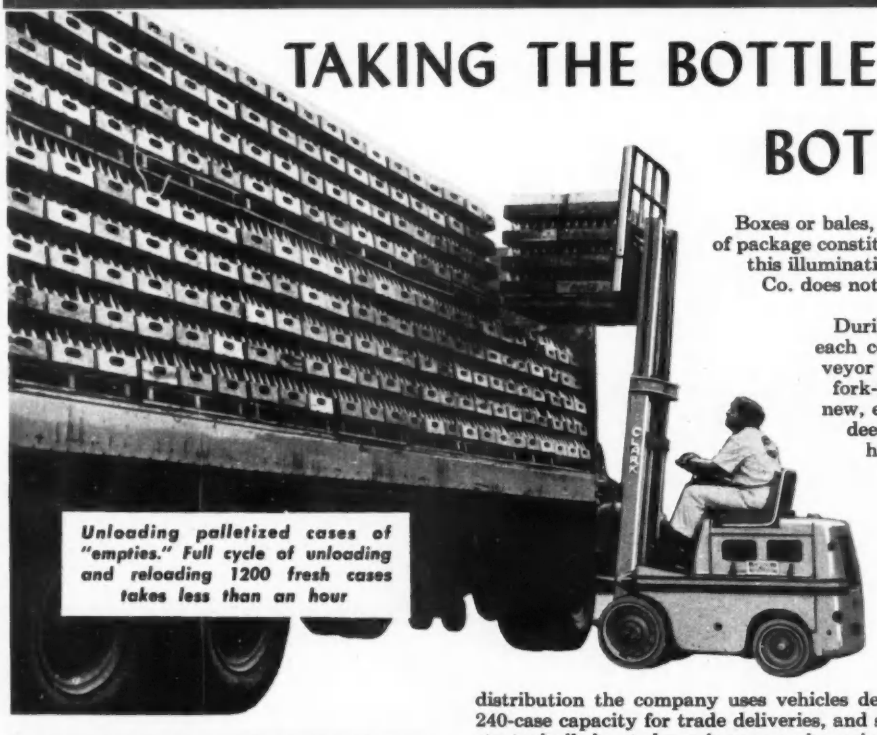
CLARK EQUIPMENT COMPANY, BUCHANAN, MICHIGAN

OTHER PLANTS: BATTLE CREEK, JACKSON, BERRIEN SPRINGS, MICHIGAN

SEE OTHER SIDE.....

MATERIAL HANDLING *News*

TAKING THE BOTTLE NECK OUT OF BOTTLE HANDLING



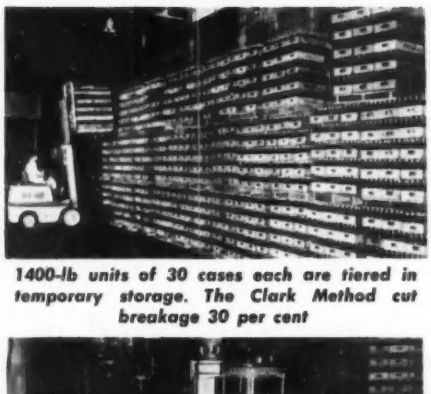
Unloading palletized cases of "empties." Full cycle of unloading and reloading 1200 fresh cases takes less than an hour

Boxes or bales, barrels or bottles, it doesn't matter what kind of package constitutes your handling problem—consider whether this illuminating experience of Cleveland Coca Cola Bottling Co. does not suggest an easy, money saving way to whip it.

During an eight-hour day more than 12,000 cases, each containing 24 fresh bottles, come off the conveyor lines from the bottling machines—and Clark fork-lift trucks take over. And every day brings new, emphatic proof that the Clark Method has indeed taken a serious bottle neck out of bottle handling, and cut handling costs to a minimum.

In this fast-stepping business with its tremendous volume, swift turnover and narrow profit, speed is necessary—and speed is the essence of the Clark Method.

As the cases of freshly filled bottles come off the conveyor line they are placed on pallets, 30 cases to each unit load; and are taken by fork-lift trucks either to storage, or to be loaded directly for delivery. For distribution the company uses vehicles designed specifically for the purpose—trucks of 240-case capacity for trade deliveries, and semi-trailers that carry 1200-case loads to nine strategically located warehouses, each serving a territory by means of regular delivery trucks.



1400-lb units of 30 cases each are tiered in temporary storage. The Clark Method cut breakage 30 per cent

Handling "empties" is the same simple routine in reverse—palletized cases of empty bottles returned to the main plant by trucks and trailers, and handled at both ends by the fork trucks.

How Clark machines have increased productive capacity is shown by the fact that Clark fork lift trucks can unload and reload a delivery truck in seven minutes—and that a big semi-trailer can be unloaded and reloaded in less than an hour.

In addition to the basic job of handling palletized cases, *all* heavy lifting work is performed easily by the Clark machines. And on top of tremendous time savings a 30 per cent reduction in breakage is a plus-benefit reported by the company.

Isn't it worth a small time investment to win big savings? The Clark Method is winning them every day—in businesses like yours. Talk over your problems with a Clark representative—you'll find it's good business to CONSULT CLARK.



From the bottling line cases are assembled on pallets. The Clark Method eliminated several handling operations

CLARK ELECTRIC AND GAS POWERED **FORK TRUCKS**
AND INDUSTRIAL TOWING TRACTORS



INDUSTRIAL TRUCK DIV., **CLARK EQUIPMENT COMPANY** BATTLE CREEK 67, MICH.
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE WORLD
AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

PRODUCTS OF CLARK—TRANSMISSIONS FORK TRUCKS & TRACTORS AXLE HOUSINGS
GEARS AND FORGINGS RAILWAY CAR TRUCKS ELECTRIC STEEL CASTINGS
FRONT AND REAR AXLES FOR TRUCKS AND BUSSES METAL SPOKE WHEELS TRACTOR UNITS

Mechanics' Work Orders

Continued from Page 87

the last column. A complete description of the work to be done is listed. Then as the mechanic working on the job gets the parts from the parts room, he lists them on this work order. When the job is finished, the mechanic signs the work order. If it is a long job and two or more men work on it, a work order is made out by each mechanic, and each records exactly what he himself has done, and the parts he has used.

Step III—Correcting Work Orders

AT THE END of the shift the superintendent collects the work orders from the different mechanics. All of the work orders for each unit are clipped together, and the superintendent transfers the number of hours from the mechanic's time card, totals the cost of labor in the labor column, the cost of the parts in the parts column, and then totals both columns.

Our file for these work orders in the superintendent's office, a balcony room (about 8 ft. square) built over a section of the shop, has a drawer for each of the 65 units. Each work order is filed, when totaled, under the unit number.

This work order is used for all jobs whether maintenance, major over-hauls, minor over-hauls, replacements, or what. It is the only form made out on the shop floor.

Step IV—The Reference Card

WHEN REPAIR work is completed, the record of it is transferred by the superintendent to a mechanic's reference card (Form B—an orange card). The green filing tab on this card bears a description of the unit. A brief description of the job just completed is listed on the face of the card together with the date on which the job was completed. No costs—labor or parts—are recorded on this card. It is merely a reference card to be used by the mechanics. These cards, one for each unit, are kept on a desk in the parts room. A work order can be taken at any time to the reference card for that unit, and the mechanic has a full history of the maintenance work done on that unit since its purchase.

At the end of the month the superintendent himself takes the work orders to the bookkeeper in the main office. As he is personally responsible for any that are lost (no duplicates have been made), he uses utmost caution in their handling. To date none have been lost.

Step V—Consolidation

THE BOOKKEEPER transfers the information on the work orders to a consolidation sheet (Form C)—one for each unit. She makes three copies of this—one is sent back to the shop superintendent, one is filed for the bookkeeper, and one is filed in the main office. After posting, the work orders are filed by unit number. So far the mechanic's reference cards have answered all shop questions and it has not been necessary to refer to a single original work order after it has been filed; this in the three years we have used the present system. More often than not a common sense method like this one has a way of working out.

Common Sense Checking

IT IS the shop superintendent's responsibility to see that every unit is

(TURN TO PAGE 122, PLEASE)



This Rolling Stone Gathers Moss

And Here's Why—It Has **BUELL AIR HORNS**

"Moss," "Green Stuff," Dollar Profits . . . that's what this truck makes for Central Concrete Company of St. Louis. Gathering profits while "rolling stone" is easy *if* the truck can make fast deliveries of heavy loads through city traffic. That's where air horns help by cutting slow-downs . . . but why Buell Air Horns?

HERE'S THE REASON

Only Buell Air Horns have the "free-floating *disc*" principle of producing sound. This means you get more volume and power from a Buell than from any other horn of equal size. You make no periodic adjustments for air pressure or tone. And Buells can give a soft, polite signal with as little as three pounds of air pressure! You have *power* when you need it . . . *control* when you need it.

These are the reasons why manufacturers and truckers alike specify Buell Air Horns. These are the reasons why Buells Are A Better Buy—Better Buy Buells.

Write for literature and fleet discounts

Standard equipment on Autocar Trucks and GMC Buses.
Approved for installation on all air-equipped trucks and buses.

BUELL MFG. CO., 913 W. 49th Place, Chicago 9, Ill.

Work Orders

Continued from Page 121

completely checked every 14 days. There is a blackboard, 3 ft. x 5 ft., on the shop wall on which the superintendent indicates the order in which the units are to be called into the shop. It is the superintendent's job to see that that schedule is followed and that the units are held in for inspection. When the unit's hold-in is posted, it is the driver's job to report any defects or needed repairs. For the 14-day check a record is made of the work done, not of the check. Work orders are made for the actual work necessary. The mechanic spends his time on the job—not in filling out a form. He does a better job and does it in less time as his attention is on his work.

Keeping the unit on the road with a minimum of road failures is the mechanic's responsibility, and this is his opportunity to carefully check it. To date we have had no road failures since we have used this method. We believe that we have placed the responsibility of an efficient PM program on the right people—the mechanics. We believe, too, that our over-haul policy greatly aids the mechanics in keeping the dollar and cents cost of maintenance at a minimum.

Our Over-Haul Policy

THE FIRST major over-haul is given a unit at about 100,000 speedometer miles which is usually about the end of the third year. The average cost of this over-haul varies with the size of the unit—averaging from $300 for a pick-up to $700 for a large unit.

Then at the end of the 5th or 6th year or at approximately 200,000 speedometer miles, the unit is completely rebuilt. This cost averages from $1,000 to $3,000. This rebuilding policy applies to the larger units.

This newly rebuilt unit is then treated as if it were a new unit. At the end of its first 100,000 speedometer miles after the over-haul which is really 300,000 speedometer miles or the 8th or 9th year from the date of purchase, it receives a major over-haul of the same kind as when it received its first over-haul at 100,000 miles with a similar cost. When it is ready for its second rebuilding job, the truck is retired from service and turned in on a new one.

The mechanic's reference card for each unit readily shows us the maintenance history of its life. A careful study of this record guides us in buying the best replacement for our fleet.

Fewer Records Pay

WE FIND that there are a number of advantages in holding our records to a minimum.

1. We are utilizing the mechanic's time as a mechanic and we are not making a bookkeeper out of him—he is not wasting his efforts sharpening pencils. I've never known a mechanic who likes to make out records.

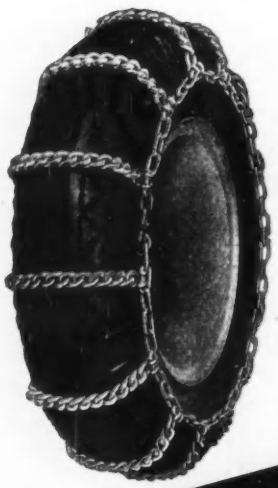
2. With fewer records, the foreman and superintendent have more time to spend in actual supervision of the work being done. Hence, a better job is actually done.

3. The work order and the mechanic's reference card show the whole picture of the unit at a glance. The conference of the mechanic with the foreman over the job is to the point and no guess work is involved—the story is brief, clear, and the date and information on the one card shows the time and nature of all work previously done.

4. Major repair work and replacement rebuilding done at leisure during the day shift, shows both increased economy and a better job.

END

(Please resume your reading on P. 88)



For Winter Weather Traction ...equip with

CLAW* TIRE CHAINS



The cost of a set of CLAW chains isn't a drop in the bucket compared to the value of a car or truck, their loads, or your operating schedules. Keep 'em rolling surely and safely. Buy CLAW chains...the "traction insurance" used by the biggest operators.

COLUMBUS McKINNON Chain CORPORATION

General Offices and Factories: Tonawanda, N. Y.

Plants at Angola, N. Y.; St. Catharines, Ont., Can.; Vereeniging, So. Africa

"I'm stalled
on the 9 Mile Road"







THE AC FUEL PUMP SYSTEM
HELPS KEEP YOU
OUT OF TROUBLE

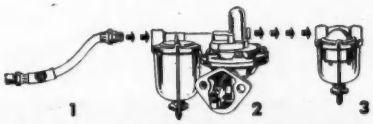
It means delay and expense when your driver 'phones that the fuel system failed out in the country.

Two simple precautions will avoid such costly failures: 1—Be sure the fuel pump is an AC, heart of the fuel system on over 35,000,000 motor vehicles. 2—Inspect the AC Fuel Pump, at regular intervals, for pressure and flow . . . and do as many operators do, replace all pumps at specified mileages.

Complete 3-way protection can be assured by using the other two units of the AC Fuel Pump System . . . the AC Gasoline Strainer and the AC Flexible Gasoline Line.

AC SPARK PLUG DIVISION • GENERAL MOTORS CORPORATION

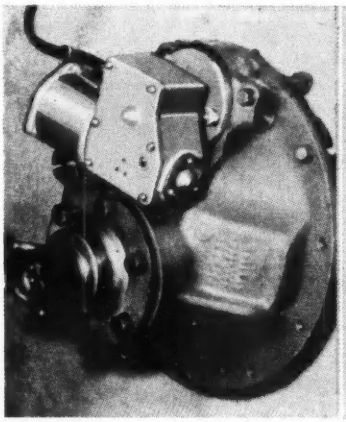
AC
FUEL PUMP
SYSTEM

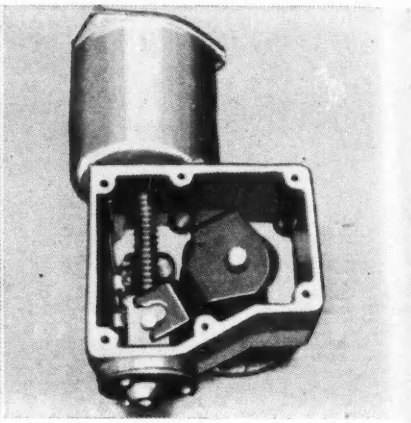


1. Leaky fuel lines are not only dangerous, but cause faulty operation of the fuel pump. Install a new **AC Flexible Gasoline Line** when you replace your fuel pump. 2. **AC Fuel Pump**, Heart of the Fuel System. 3. **AC Gasoline Strainer** keeps dirt and water out of carburetor, promotes easy starting and protects delicate carburetor parts. Your fuel system needs one.

EATON

Electric Shift Features Simplicity





RIGHT. The electric shift mounted integral with differential. EXTREME RIGHT. Drive screw which operates automatic switch

A UNIFORM actuating force provided by the new Eaton electric shift is said to insure more positive control in two-speed axle shifting with consequent reduction in wear.

Three main parts constitute the shifting mechanism: a switch, located on the transmission gear shift lever; speedometer adaptor to compensate for variations in drive shaft speed between high and low ranges of axle speeds; and the axle shift unit which provides actuation for the shift.

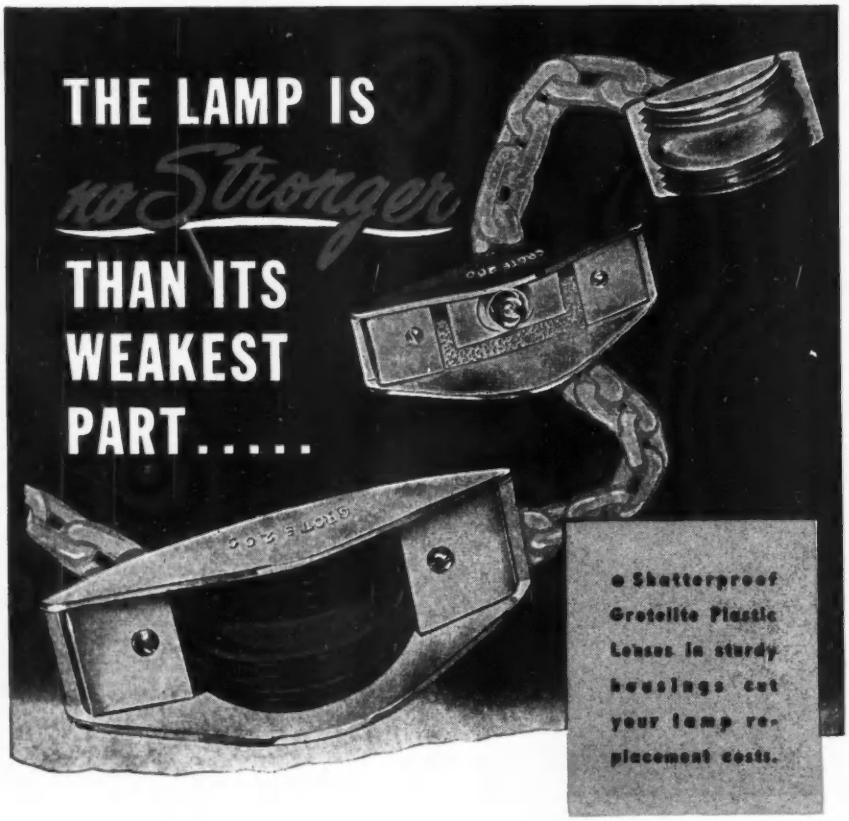
The axle shift unit consists of an electric motor assembly, an automatic switch, a drive screw assembly, and a shift fork actuating assembly with torsion spring. All parts are located in a compact box mounted ahead of the differential. The push button control unit is located on the gear shift lever. Parts have been designed with an eye toward simplicity of construction and ease of service. Shifting is said to be smooth and unaffected by altitude.

Heart of the new mechanism is a drive screw with an automatic switch which actuates the shift.

To start operation of the electric shifter, a control switch is flipped to permit current flow to the motor armature and drive screw. When the drive screw assembly nut has moved a distance sufficient to wind the torsion spring, a contact bumper on the nut breaks an electrical connection to the switch, stopping the motor. A ball screw detent spring holds the nut at the end of its travel on the screw. In this position enough tension is put on the spring to snap the shift into high range as soon as the load on the axle gears is relieved. Preloaded tension on the spring holds the axle in either gear.

In shifting to low axle speed, the control switch is pushed down, and the motor turns the screw in an oppositive direction so the nut travels to the top, winding the spring for the shift.

To accomplish a split shift, as for instance, the next higher gear in the transmission and at the same time from high to low speed axle, the transmission shift is made in the usual manner and just before the clutch is engaged, the button switch is pushed down.



Most of your lamp replacements are due to the broken lens — not because of any weakness in the housing. Grote brings you lenses of Grotelite Plastic that are a sturdy, lasting complement to the strongest lamp housing. They will not shatter, will not crack from shock or vibration. They survive bumps and blows that send ordinary lamps to the scrap pile for expensive replacement.

The same rugged Grotelite plastic lenses are furnished in all Grote stop and tail, clearance, marker, identification, dome lights and reflectors. Ask your supplier or write us for catalog.

Pioneered by Grote, they are time-proved by rigid tests and long use. Grotelite lenses are many times more durable than glass. They do not chip, shatter or fade in heat or sunlight.

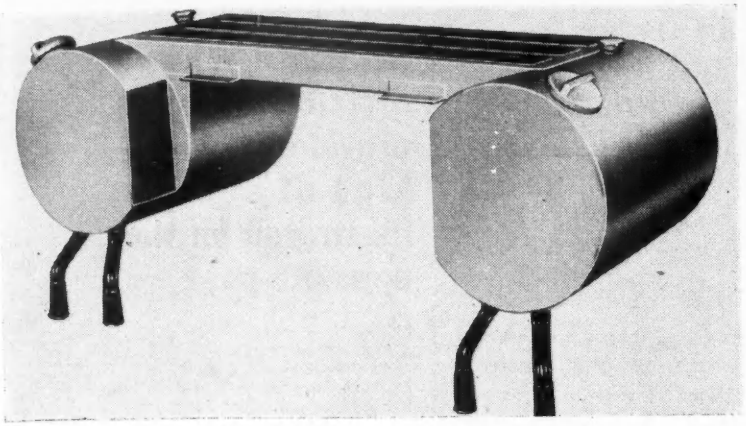
Drop one of these lenses, let an overhanging branch strike it, back into a loading dock — the Grotelite lens will still be in service long after a glass lens has shattered. Specify Grote armored marker lamps and get more lamp miles per dollar.

• *Pioneer Manufacturers of Plastic Lenses for Automotive Lamps*

the Brightest Spot on the Road

Grote

Opposite Cincinnati
THE GROTE MFG. CO., INC.
Grote Square
BELLEVUE, KENTUCKY



LINTERN

Saddle Tank Integral with Sander

A NEW TYPE of saddle tank incorporating a power sander and having high crash resistance as well as additional safety features has been introduced by Lintern Corp. of Berea, Ohio.

With a capacity of 125 gal, the cylinder tanks, supported and braced into a low saddle structure measuring 26 in. wide, are fillable from either side, have two gas caps, each cap having a safety valve with increased fusible element area for greater safety. The saddle is flat and topped with a skidproof deck of abrasive material.

The Cylsan tank which is equipped with the combination sander, includes two 125 lb-capacity sanders, separated from the gasoline compartment by a doubly welded 12-gage steel bulkhead, its interior coated with heavy mastic material. Adjustable sander valves vary grit flow; a standard setting permits a rate of 20 lb per min. For complete hookup, a hand-operated valve to be dash-mounted is included together with copper tubing and fittings. Air or vacuum-operated sander valves are available.

Hopper Capacity 100 lb.

Ample power allows use of a grit agitator to insure immediate and liberal flow when valve opens. Hopper capacity is 100 lb of grit.

The air and vacuum units are basically the same except for the actuating mechanism.

Electrically-operated sanders are for use where electrical systems are not already overloaded and require comparatively small power, taking either six or 12 volts. Protected against accident or moisture, the electric solenoid and valve assembly is located inside the hopper, easily removed for inspection. A thermal fuse breaks the circuit to prevent damage should switch accidentally be left on.

★★★★★★★★★★★★★★★★★★★★★★★★★

SLOWGAN

A hand-out is a GOOD TURN

★★★★★★★★★★★★★★★★★★★★★★★★★

Put Your Money on the

Thermoid Line

Built for Heavy Duty Service



Thermoid Brake Blocks are made to give you reliable performance under ALL operating conditions, hot or cold, wet or dry—they are not a compromising adaptation. They last longer and reduce "downtime" maintenance costs.

For heavy duty applications requiring up to ½-inch thick braking materials, Thermoid CBB Sets are dual-friction, specially molded.

The Thermoid Line

Brake Linings • Clutch Facings • Fan Belts
Radiator Hose • Hydraulic Brake Parts and Fluid
Car Mats • Thermoid Precision Process Equipment
Complete Brake Service Departments

Thermoid Company, Trenton, New Jersey

To Reduce Tire Maintenance Costs



• Use assembly line methods in mounting tires—the way it's done at the factory on all new trucks.

To make sure that inner tubes and flaps slide—not stretch—into position and to guard against pinching and bead injury . . . the tires, tubes and flaps on new trucks and cars are lubricated with a *wet* lubricant before assembly. This conforms with the recommended procedure of tire manufacturers.

*Ru*GLYDE — the ready-to-use, *wet* lubricant—helps prevent premature tube and tire failure . . . makes tire mounting faster and easier. 100% safe for both natural and synthetic rubber. No castor oil . . . no alcohol . . . no harmful soaps. Will not induce rim rust nor harm finishes.



Available through jobbers in one and five gallon cans with *Ru*GLYDE tire applicator; also 8 oz. refillable dispenser.

AN AGS PRODUCT

AMERICAN GREASE STICK CO.
Muskegon, Mich.

On and off the rim with RUGLYDE makes tire changing SAFER, FASTER, EASIER.



For dismounting stuck or rusted tires, apply *Ru*GLYDE to both sides of tire along edge of rim. Allow few minutes for penetration, then proceed with tire removal.

*Ru*GLYDE® Approved Rubber Lubricant
Standard of the Industry since 1938

Light Vans . . .

Continued from Page 79

volt emergency generator is located in a box under the crew seat for added protection.

Typical Equipment Carried

TO GIVE some idea how much these vans hold, despite their relatively small size, the following is the list of equipment carried by the Underground Department: Splicing tools, 2-in. water pump, vent blower, safety guards, necessary tackle, ladder, wet weather apparel for the crew, and a full assortment of necessary parts. In addition, the vehicles used by this department carry six men, including the driver, in a separate compartment.

To complete the flexibility of these trucks, they are equipped with a two-way radio, which has proved to be an almost indispensable piece of equipment.

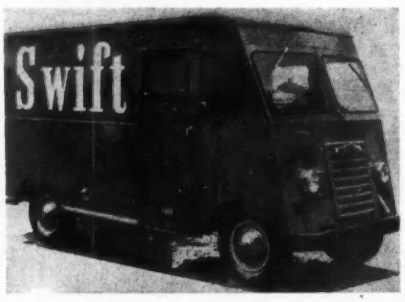
END

(Please resume your reading on P. 80)

RECORDS FOR SMALL LINES

The American Trucking Associations, Inc., has available a simplified bookkeeping system for small truck lines which meet all requirements of the Interstate Commerce Commission. The system comes in two sizes, one for truck lines with annual income less than $50,000 per year and one for class II carriers with income above $50,000 but below the Class I carrier level. For further details inquiries should be addressed to the association at 1424 16th St., N. W., Washington 6, D. C.

Baby Reefer



Although similar to standard package delivery type bodies, this one is a refrigerated job complete with hold-over plates and condensing unit. It is one of a new line developed by Atlas Body Corp., Philadelphia

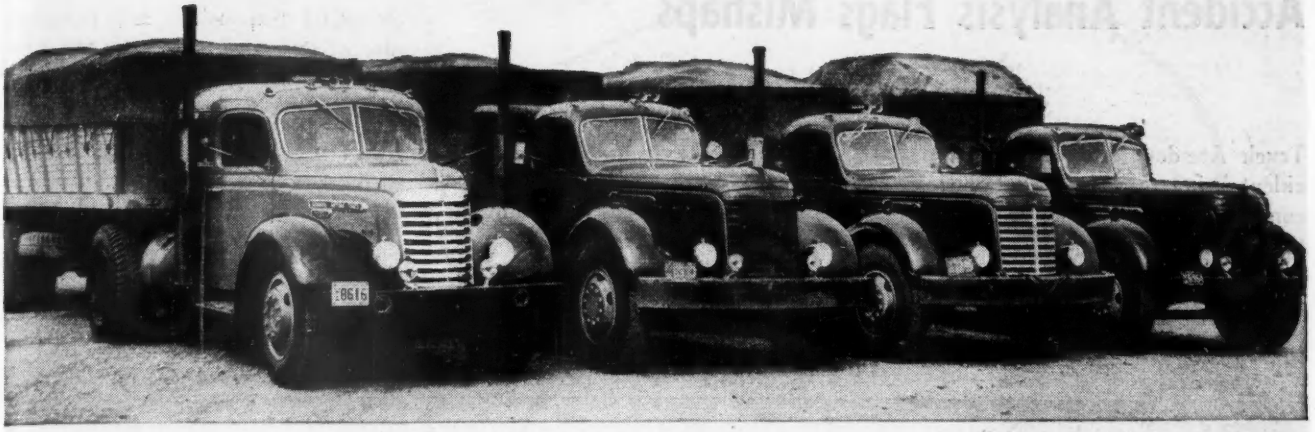
All Budd Wheel distributors can provide the same kind of service illustrated on the opposite page

AKRON—Motor Rim Manufacturers Co.
ALBANY—Wheels, Incorporated
ALBUQUERQUE—Wheels & Brakes, Inc.
ATLANTA—Harris Automotive Service, Inc.
BALTIMORE—R. W. Norris & Sons, Inc.
BIRMINGHAM—Cruse-Crawford Wheel & Rim Co.
BOSTON—New England Wheel & Rim Co.
BUFFALO—Frey, the Wheelman, Inc.
CHARLOTTE—Carolina Rim & Wheel Co.
CHICAGO—Stone Wheel, Inc.
CINCINNATI—Rim & Wheel Service, Inc.
CLEVELAND—Motor Rim Manufacturers Co.
COLUMBUS—Hayes Wheel & Spring Service
DALLAS—Southwest Wheel, Inc.
DAVENPORT—Stone Wheel, Inc.
DAYTON—Rim & Wheel Service Inc.
DENVER—Quinn & McGill Motor Supply Co.
DES MOINES—Des Moines Wheel & Rim Co.
DETROIT—H. & H. Wheel Service, Inc.
FARGO—Wheel Service Company
GRAND RAPIDS—Rim & Wheel Service Co.
HARRISBURG—Standard Wheel & Rim Co.
HARTFORD—Connecticut Wheel & Rim Co.
HOUSTON—Southwest Wheel Inc
INDIANAPOLIS—Indiana Wheel & Rim Co.
JACKSONVILLE—Southeast Wheel & Rim Co.
KANSAS CITY—Borbein, Young & Co.
KNOXVILLE—Harris Automotive Service, Inc.
LOS ANGELES—Wheel Industries, Inc.
LOUISVILLE—Auto Wheel & Rim Service
MEMPHIS—Beller Wheel, Brake & Supply Co.
MILWAUKEE—Stone Manufacturing Co.
MINNEAPOLIS—Wheel Service Co.
MOLINE—Mutual Wheel Co.
NASHVILLE—Beller Wheel, Brake & Supply Co.
NEWARK—Automotive Safety Inc.
NEW HAVEN—Connecticut Wheel & Rim Co.
NEW ORLEANS—Southern Wheel & Rim Co.
NEW YORK—Wheels, Incorporated
OKLAHOMA CITY—Southwest Wheel, Inc.
OMAHA—Morgan Wheel & Equipment Co., Inc.
PEORIA—Peoria Wheel & Rim Co.
PHILADELPHIA—Thomas Wheel & Rim Company
PITTSBURGH—Wheel & Rim Sales Co.
PORTLAND—Six Robblees, Inc.
PROVIDENCE—New England Wheel & Rim Company
RALEIGH—Carolina Rim & Wheel Co.
RICHMOND—Dixie Wheel Co.
ROCHESTER—Frey, the Wheelman, Inc.
SALT LAKE CITY—Henderson Rim & Wheel Service
SAN ANTONIO—Southwest Wheel, Inc.
SAN FRANCISCO—Wheel Industries, Inc.
SEATTLE—Six Robblees, Inc.
SOUTH BEND—Wire & Disc Wheel Sales & Service
SPOKANE—Bearing & Rim Supply Co.
SPRINGFIELD, ILL.—Illinois Wheel & Brake Co.
SPRINGFIELD, MO.—Borbein, Young & Co.
ST. LOUIS—Borbein, Young & Co.
SYRACUSE—Colbourn Wheel & Rim Service, Inc.
TACOMA—Six Robblees, Inc.
TOLEDO—Wheel & Rim Sales Co.
WICHITA—Borbein, Young & Co.

EXPORT
CLEVELAND—C. O. Brandes, Inc.

CANADA
CALGARY—Fisk Tire Service Ltd.
EDMONTON—Alberta Wheel Distributors, Ltd.
MONTREAL—General Auto Equipment Ltd.
TORONTO—Wheel & Rim Co. of Canada, Ltd.
VANCOUVER—Wheels & Equipment, Ltd.
WINNIPEG—Ft. Garry Tire Service Ltd.





FT. WORTH TO L.A. IN 36 HOURS

...no time for tire trouble

Mr. E. A. Copley, Dallas Branch Manager for Southwest Wheel, Inc., writes, "The Marco Chemical Company of Ft. Worth manufactures feed, which is hauled in huge quantities to Los Angeles. An extremely fine volume of business has been built upon a top-notch service record. Trips average 36 hours —remarkable time!

"The terrific speeds and heavy loads involved in this operation created a tire problem which prompted Marco's Mr. Rosenthal to consult their tire supplier, who in turn called in our Southwest Wheel man, Cecil Stroud. Maintaining the same 1100x22 tire size, a wheel changeover, from 22x7:33v's to Budd Wide Base 22 x 8:00's, was made on one unit.

"Even though the wheels are wider, there is now greater spacing between duals . . . ample spring clearance. An increase in the tire mileage of 20% is assured, 30% is expected. Not a single blowout since the changeover! So conclusive are these results that the entire fleet of 19 tractors and trailers is being converted. Says Mr. Rosenthal, 'Sorry we didn't know about Budd Wide Base Wheels a couple of years ago'!"



Look for this label (in blue, red and gold) on the rim of every genuine Budd Wheel

There is a complete list of Budd Wheel distributors on the opposite page. The Budd Company alone has a *complete* line of wheels with tapered bead seat rims. Check with your Budd distributor—he's an expert on wheel and tire combinations. He'll show you how Budd Wheels can save you money, polish your operation. No obligation, of course.

The Budd Company, Detroit 14, Mich.

Accident Analysis Flags Mishaps

Continued from Page 82

Truck Accident Summary, each accident being thus fully explained in concise form. The company operation is divided sectionally; southern, central and eastern, so each superintendent's attention is drawn to the data which most concerns him. All superintendents, however, get the complete report, enabling them to read of conditions and recommendations in each division. Thus all accident information is disseminated. Perhaps it will be used profitably.

We also furnish terminal and division executives periodically certain factual charts and graphs showing accident frequency, severity, driver personnel responsible and comparisons of such records with a ten year average.

Drivers Reference

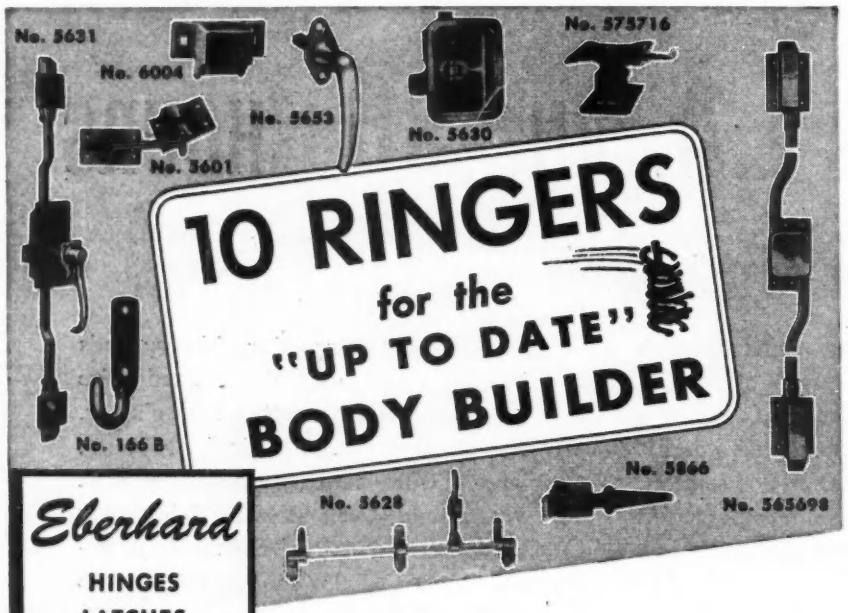
FORM 5 is kept as a quick form of reference to the status of any driver. When this record shows three accidents, or when the driver receives a citation, or a warning ticket from the highway patrol, or when the insurance company safety engineers submit an adverse report, a warning letter is sent to the driver. On the next offense a more severe warning letter is sent with a copy to his local union, and on the next offense he is discharged. Such offenses are not considered accumulatively beyond a year's time, making this system completely fair to each driver.

I make a practice of keeping warning letters on a conservative plane, believing that no purpose is served by irritating drivers with barbed remarks. We earnestly solicit the drivers' co-operation in our remarks, emphasizing that safety is a job at which we must all work. Incidentally, such letters are all addressed to the drivers' homes, a plant which gives us more safety campaigners, for the drivers' wives will see and read these warnings, giving them a motive to preach the safety cause.

When a man receives his first warning letter, a green tab is placed in the upper right hand corner of this form, drawing attention to the irregularity, keeping it in sight; if a second warning is given, the tab, changed in color from green to yellow, is moved a notch farther to the right, making it easy to segregate that class of offenders if we wish to institute a special safety program applying to it. When the third warning is given, the tab, red at this point, is moved still farther to the right; then we know the driver's status has reached the critical point.

This form covers five year's time. On the back of the form we carry the record of the driver in the "Sights for Safety"

(TURN TO PAGE 130, PLEASE)



Eberhard

HINGES
LATCHES
DOOR IRONS
DOOR CONTROLS
DOOR HOLDERS
SEAT IRONS
LOCK HANDLES
SEAT PEDESTALS

LOCKS

REFRIGERATOR
PANEL DOOR
VAN BODY
SLIDING DOOR

ROPE HOOKS
LADDER HOLDERS
ETC.

ILLUSTRATED above are but ten of hundreds of truck body fittings, expertly designed and manufactured by Eberhard.

Competitive sales scores of many up-to-date body manufacturers are being raised through the profitable utilization of Eberhard automotive hardware.

There are doubtless one or more items illustrated herein, which are requisite on the next body job.

EBERHARD Long Run
TRUCK BODY FITTINGS

EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Co. EVARTS AVENUE CLEVELAND, OHIO

30-Ton Mack Enters France



Largest truck ever to enter France, according to authorities of that country, is this Mack Model LRSW, shown here being swung aboard the United States Line's "American Inventor" in New York harbor. Weighing 58,000 lb and measuring 29 ft 4 in long by 11 ft 1 in high, this off-highway Mack is equipped with hydraulic power steering and is driven by a 275 hp super-charged diesel engine. Having 30 tons payload capacity it is now being operated at the Ottmarsheim quarries



BENIUM* *Heat-resisting material is the secret ingredient developed by the Marshall-Eclipse Division of Bendix and used exclusively in Eclipse brake linings and heavy-duty brake blocks.*

ADDED BLOCK LIFE MEANS LOWER COST PER MILE

When overhead comes down, profits go up. And that is just what happens when you use long-wearing Bendix Eclipse Brake Blocks. Brake maintenance costs are cut to a minimum because of the added service life in every set. Valuable hauling time is saved, too, because vehicles stay on the job—out of the shop. For smoother, safer stops, install Bendix Eclipse Brake Blocks on your fleet—let *Benium* work for you. There are more miles per dollar and more profits per truck when you do.



Eclipse Brake Blocks

A PRODUCT OF **Bendix**

Greatest Name in Braking!

MARSHALL-ECLIPSE DIVISION OF
TROY, NEW YORK

Bendix
AVIATION CORPORATION

Kester Flux-Core Solder ...The Mechanic's SILENT PARTNER



Good mechanics know that Kester Acid-Core Solder will do those numerous repair jobs faster and better. Kester Solder, in 1, 5 and 20-lb. spools, is the most important item in your shop. Insist upon KESTER ACID-CORE SOLDER from your jobber . . . the mechanic's standard for over half a century.



METAL MENDER AND RADIO SOLDER AVAILABLE IN HANDY "TOOL KIT" PACKAGE

A convenient size for those "away from the shop" jobs, or as a quick turn-over resale item that sells on sight (25c in most areas). Packed ten boxes to a display carton.

KESTER SOLDER COMPANY

4201 Wrightwood Avenue Chicago 39, Illinois

Factories also at Newark, New Jersey • Brantford, Canada

1899 50th Anniversary 1949

KESTER SOLDER

Accident Analysis

Continued from Page 128

merchandise plan, showing date eligible points earned, charges, number issue and dates. Certain other information is outlined then in code.

For the past year we have experimented with a new method of keeping a compact record for immediate reference to information covering our figures for the National Truck Safety Contest. As shown by Form 7, the system obviates the necessity of checking through two or three different sets of records when final results are to be compiled.

Speed Checks

ABOUT a year ago also we began using the tachograph chart system as a further means of checking drivers. We feel that we are getting maximum results from information thus provided. Every chart which shows excessive speed or other irregularities is called to the erring driver's attention, perhaps not today or even tomorrow, but within a week it will be followed up, letting the driver know that we are checking these charts.

A regular office employee receives these charts, sorting the ones showing regular operation from those showing excess speed and other irregularities. Charts of faulty drivers are then given the proper attention.

We also take advantage of aids offered by the insurance carrier which co-operates by furnishing a monthly bulletin, "Fleet Flashes" and monthly "Safety" letters to be furnished the drivers. The insurance company also furnishes monthly posters featuring safe driving and safe work habits, safety hints and slants which we are glad to display in all our terminals, docks and shops.

A safety reminder is also furnished monthly by the insurance company, these reminders being placed in brackets on the dash of each vehicle.

Another source of information which proves helpful is the periodical trailing report, also compiled by the insurance company, which gives reports of highway operation of our men and results of inspections applying to our terminals. Circumstances surrounding city accidents are supplied by still another insurance report.

Our own company house organ, "In Transit," issued every 60 days, features safety and safe driving in each issue. It is our intention not to let anyone concerned lose sight of this vital responsibility of the motor carrier.

END

(Please resume your reading on P. 83)

Harvey B. Lindsay Retires

Harvey B. Lindsay retired as president of the Lindsay Corp. of Chicago and Melrose Park, Ill., on Aug. 31, his 69th birthday. At the same time, the name of the corporation was changed to Lindsay Structure, Inc. with Owen S. Lindsay, new president and treasurer.

Commercial Operators!

Genuine FORD Parts

save you TIME and MONEY!



Genuine Ford Parts are *right* for Fords—made right to fit right and last longer, save time and money!

Every Genuine Ford Muffler is "Tailor-Made" for a Specific Ford Engine

Genuine Ford Mufflers are designed and built to suit each type and size engine. Wrong type mufflers can be dangerous. Genuine Ford Mufflers are tailored for peak performance, low back-pressure, longer life. Check these big value features:

1. **Internal parts spot-welded for long service.**
2. **Double wrapped 26 gauge shell for quieter operation.**
3. **Low carbon steel gives greater rust resistance.**
4. **Slotted center tubes.**
5. **Double-lock seams on caps eliminate leakage.**

Order from your nearest Ford Dealer—stocks are ample, delivery quick.

FORD Division of FORD MOTOR COMPANY



Genuine FORD Parts...
Right for FORDS!

Detroit Dispatch

Continued from Page 27

vice trouble before they were incorporated into the final design. They were able to point out in many instances where accessibility could be improved and parts attached differently so that they would not work loose.

Diesel Smoke Under Control

Experience of the smoke abatement bureau of Detroit has shown that violation notices to a relatively few operators for diesel smoke had been confined to companies who do not have a full time maintenance department. The bureau operates on a corrective rather than on a punitive basis and attempts to help the operators overcome the trouble rather than to issue tickets. A representative of the bureau says that exhaust smoke is not the problem in Detroit that it is in California because of different climatic conditions and also because of the lower percentage of diesels in operation here in relation to gasoline units.

Headaches in Valve Troubles

Truck manufacturers are still murmuring about valve troubles allegedly caused by fuel difficulties. Actually no one yet has definitely pinned down the trouble although some engineers think it might be the combination of sulphur or gum or both in fuel in the affected areas, and possibly in connection with additives in the lubricating oil. It not only concerns valve seat deposits but also sticking stems and is most prevalent in engines operating under heavy load at or near maximum engine speed most of the time.

Replacement Reo Engines

Reo Motors is offering its new 6-cyl overhead valve Gold Comet engine as a replacement unit for all makes of trucks. The 331 cu in. engine develops 140 hp at a governed speed of 3200 rpm. It will be sold in packaged form with all accessories and will carry a price list of $975 plus tax. Sales will be handled through service departments with the branches, distributors and dealers.

END

(Please resume your reading on P. 30)

HITS AT TRUCK FOES

Two things that can soften attacks of so-called anti-truck interests designed to sway public opinion against the industry are safer, courteous road performance and a spirited advertising and publicity campaign. So says Walter W. Belson, director of public relations for the American Trucking Associations, Inc. who warned that the trucking industry may face serious trouble ahead from an accelerated campaign by trucking opponents.

New World Safety Record



A new world's safety record for combined foundry-machine operation has been set by Wilkening Mfg. Co., Philadelphia, Pa., manufacturers of Pedrick piston rings, after 3,226,920 man-hours operation without a disabling or lost-time accident. Shown receiving plaque from Charles Butters, insurance representative, is F. W. Wilkening, company president, while H. E. Gerstley, vice president and treasurer, looks on



For Safety's Sake...Reline With CoMaX

BIG or small...use WAGNER

CoMaX

for them *all*





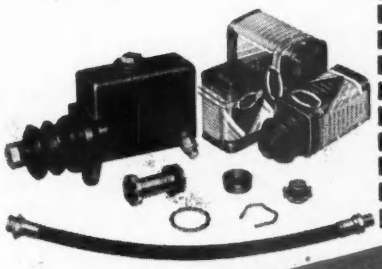
Turn out better brake jobs . . . with more mileage between relinings with superior CoMaX Brake Lining. Unsurpassed for quick, safe, smooth stops, it has exceptionally long-wearing qualities and is uniform in texture, noncompressible, age-proof and easy on the drums.

Specify CoMaX for *all* your brake lining needs . . . available in sets, rolls, blocks, slabs or cut segments to handle everything from your lightest pick-up to heaviest tractor-trailer units. Like Wagner Lockheed Hydraulic Brake Parts and Fluid, it is warehoused throughout the U. S. and Canada, and is available everywhere through Wagner wholesalers.

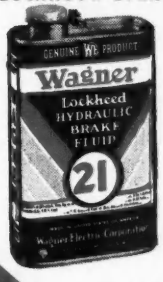
* * *

For added safety . . . get Wagner Air Brakes—the *only* air brake with the Rotary Compressor.

REPAIR with genuine Wagner Lockheed Brake Parts



REFILL with Wagner Lockheed Brake Fluid



Ask for Bulletins HU-17G and HU-197...*Tips for Better Brake Service—free on request*

Wagner Electric Corporation
6470 Plymouth Ave., St. Louis 14, Mo., U. S. A.



LOCKHEED HYDRAULIC BRAKE PARTS and FLUID · NoRol
CoMaX BRAKE LINING · AIR BRAKES · TACHOGRAPHS
ELECTRIC MOTORS · TRANSFORMERS · INDUSTRIAL BRAKES

You can depend on Wagner Quality because:
Wagner Products are used as Original Equipment by Automobile Manufacturers

849-2

Planned PM in New Shop Plan

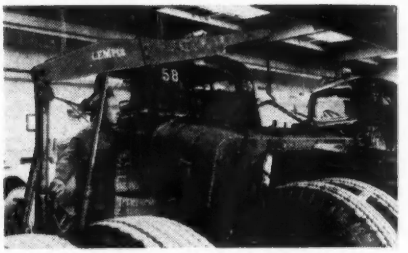
Continued from Page 77

This has been a wise enterprise for us. Before moving into these quarters we were attempting to maintain 30 vehicles in our old shop, where there was only room for two mechanics to work at one time. Due to lack of room for adequate shop equipment, much of our maintenance work had to be farmed out. The result of using private garages along the road, inadequate facilities and shortage of help put road failures ahead of an already bent balance sheet, for our cost of operation was becoming prohibitive.

The Tractor Shop

FIVE stalls are laid out in the tractor shop for maintenance, with five full-width doors leading outside to the yard. A string of fluorescent lights over the work areas provide exceptional lighting facilities for any kind of work. Skylights improve illumination and aid ventilation. Steam radiators mounted well above the working level keep the shop at comfortable temperature. Slip type exhaust pipes carry off exhaust gases and keep the shop air free from carbon monoxide and fumes.

Service tools and shop equipment are stationed along the center wall ahead of the trucks. Portable tool benches, hand tools, grinders, valve shop and electrical testing instruments are only some of the modern tools used for this work.

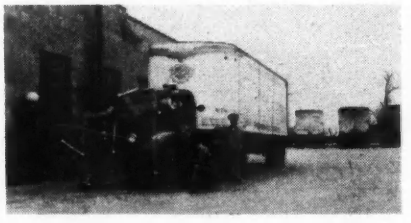


One man lifts saddle tank off tractor with crane with speed and safety

An overhead traveling crane has been installed for moving heavy parts the entire length of the tractor shop. Electrical outlets are provided at every work bench.

The Trailer Shop

THE straight-through operation in the trailer shop makes for speed and efficiency when servicing these bulky units. Ready-for-the-road service is performed at the west end, where units get gas, oil, water and are ready to roll in 15 min. Oil is kept at the south service door, and also in an area adjacent to the trailer shop, so that vehicles can be serviced either in or out of the shop. Doors are electrically-operated, and as the units leave they are headed toward the highway. The major equipment in the two-lane trailer shop is located on the north side and consists of air compressor, electric welder, acetylene equipment welding.



Service lane at back of tractor shop, where oil, gas, water, air are added

When necessary the trailer is left in the trailer shop for repairs, while the tractor is taken to the tractor shop for engine work. Here the engine is removed and a rebuilt unit is wheeled from the tool room with a portable crane.

(TURN TO PAGE 136, PLEASE)



Quicker! Safer! Lighter!

THE NEW DRUM *Safety* JACK
with SWIVEL ACTION

SPOT IT—under any axle, from any angle



SWING IT—Bring dollies into position for removing wheels without lifting



LEVEL IT—Pull wheels easily without damage to bearings or oil seals



ONE MAN does the work of two with this new, improved heavy-duty jack. No wheels to lift—no crawling under trucks. Works anywhere—under any wheel—on trucks or tractor-trailers.

Use the NEW Drum *Safety* Jack for dual wheels, single wheels or as a floor jack.

Send for descriptive folder today!



DRUM JACK CORPORATION
Subsidiary of The Cleveland Pneumatic Tool Company
3769 EAST 77th STREET • CLEVELAND 5, OHIO, U.S.A.
We would like to know more about the DRUM *Safety* JACK.

Company _____

Address _____ *City* _____

SELF-CONTROL STARTS HERE



and to Restore

ENGINE PERFORMANCE



OIL-CONTROL STARTS HERE

TO STOP OIL-PUMPING, REPLACE WORN CONNECTING ROD BEARINGS

You can be "out by a mile" when you overlook worn engine bearings in a reconditioning job. • Worn connecting rod and crankshaft bearings cause oil pumping. They let excess oil reach combustion chambers. It burns to power-stealing carbon on valves, spark plugs, pistons and rings. PERFORMANCE GOES UP IN SMOKE! • Give new rings a chance to do their own job. *Always* check the engine bearings. When worn, replace with Genuine Federal-Mogul Bearings, *engineered* for the job of oil-control!

FEDERAL-MOGUL SERVICE
(Division of Federal-Mogul Corporation)
DETROIT 13, MICHIGAN



The Complete Line—
Almost 7000 Numbers

Engine Bearings (Main, Connecting Rod and Camshaft) • Bushings • Connecting Rod Exchange • Reconditioned Connecting Rods • Rebabbitted Connecting Rods • Connecting Rod Bolts and Nuts • V-Seam Piston Pin Bushings • Bearing Metals • Laminated Shims

50th ANNIVERSARY FEDERAL Mogul

CONTROL OIL-PUMPING
WHERE IT STARTS—WITH

FEDERAL-MOGUL

OIL CONTROL BEARINGS

New Shop Plan

Continued from Page 134

The Parts Room

THE parts room, 40 x 17 ft., being located in the center of the working areas, is handy to both the tractor and trailer shop. Here engines are rebuilt and parts stocked for the entire operation. Thus engines must move only 15 ft to the overhaul section. The other advantage of this layout is the fact that all replacement parts as well as special tools are at arm's reach.

One side of the parts room is stocked with small parts in bins and in packaged units. Gaskets and similar parts hang on the rear wall for quick selection, while smaller fittings and ignition parts are in a center row of bins on both sides and ends. Bulky items such as fenders and grilles, are suspended from hangers from the ceiling. A skylight overhead provides good lighting and ventilation, though fluorescent lights here insure adequate illumination at all times. Rebuilt engines are mounted on stands ready for the next installation.

The parts room is maintained on a one-sixth replacement basis; spare parts for one-sixth of the fleet are carried at a given time. Sufficient parts are carried, for example, to build a complete truck, the frame excepted.

Our fleet operates between Chicago, Ft. Wayne, our home headquarters here at Ft. Wayne, and Pittsburgh. We haul general commodities including perishable food products in refrigerated semi-trailers between these points which are approximately 500 miles apart. For this reason it is imperative that we have equipment and facilities to meet schedules and requirements of shippers. Only through a modern shop layout with modern equipment and a carefully controlled PM plan is this service possible. To progressive shop planning goes the credit for meeting these rigid schedules.

END

(Please resume your reading on P. 78)

NASH BODY-GARD BUMPERS



CUSTOM BUILT FROM HI-TENSILE STEEL

Channel Type Construction

FOR NEW EQUIPMENT OR REPLACEMENT ON TRUCKS, BUSES, COACHES AND ALL TYPES OF COMMERCIAL TRUCK BODIES

Stamped from rugged HI-TENSILE steel, Nash Body-Gard Bumpers are designed to fit and protect the front and rear of all types of trucks, truck bodies, buses and coaches. Due to flexible tooling and equipment, they can be made to your exact specifications and at economical prices. The style and size Body-Gard Bumper you order can be shipped promptly.

Body-Gard Bumpers meet a need long felt by the entire industry. They are styled to improve any vehicle's appearance and are built to provide maximum protection with minimum weight.

Send for folder which describes how the Body-Gard line will help you solve your bumper problems.

5 FACE WIDTHS

3½", 4½", 5½", 6" and 6⅝" wide

3 STYLES

REGULAR
With 3⅜" end form

FULL
With end form up to 7½"

WRAP AROUND
End form as deep as required

PROMPT DELIVERY • LOW COST

NASH BROS. COMPANY

Manufacturers of Nash Tire Carriers

PAYNE STREET AND DEWEY AVENUE, EVANSTON, ILLINOIS

Quiz Answers

See Page 22

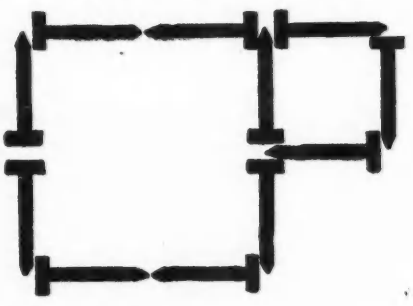
1. Filter elements. Chemically treated spun fibres made from casein and wool form the cartridge that may become standard equipment on vehicles using oil bath cleaners.
2. State testing section to test wear factor on the stops.
3. 100,000 miles.
4. Average cost per mile is $28 or a total of $2,800,000.
5. $60 billion.
6. Almost 10,000,000 tons of livestock were transported by truck.
7. 48,295,833 live animals were transported by truck.
8. 3,220,000.
9. Seven-eighths of the distance.
10. 15,000 trips around the equator.

Answers To Time Out for Play

(See Brain Teasers, Page 22)

Six Nails Removed

Solutions with the small square in the upper left, lower left and lower right corners are also correct.



Diesel Hourglass

DIESEL
SLIDE
ISLE
LIE
EL
E
EN
NEE
GENE
GENIE
ENGINE

"Only Magnesium-Light is light enough"

You'll hear this said often about Dow

MAGNESIUM

the world's lightest structural metal!



With the value of lightness emphasized by constantly rising costs, operators in the motor transport field want more than just lightweight equipment—they want equipment that is *magnesium-light.* These men who use everything from small panel trucks to huge trailers know that only with magnesium can maximum lightness be achieved.

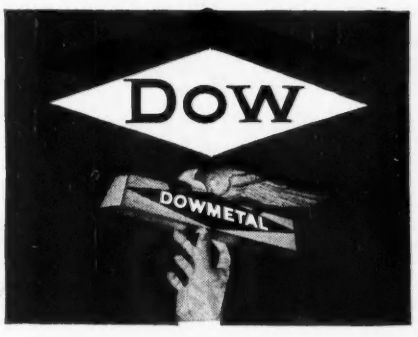
Magnesium is strong and durable and yet is a full one-third lighter than any other structural metal. This bonus—this premium of one-third greater lightness—makes possible significant weight savings which are immediately reflected in increased payload and decreased operating and maintenance costs. A properly designed magnesium body is frequently 20-25% lighter than the same size body built with other light metals.

If you are looking for an economical way to increase payload and cut dead weight in your equipment, it will pay you to investigate magnesium. For more complete information and technical assistance, write to Dow. Ask for your free copy of "Hauling Costs Down."



Get maximum weight reduction—
Use Magnesium Extrusions

Magnesium extrusions can give you significant weight reductions without the loss of needed strength and rigidity. Service records of bodies now in use have proved that magnesium bodies are just as strong—just as dependable—as bodies built from other materials. Magnesium extrusions are economical, too. They are competitively priced and available in shapes and sizes specially designed for use in truck bodies and trailers.



Lighter Products Sell—make your product Magnesium Light!

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago • St. Louis • Houston
San Francisco • Los Angeles • Seattle • Dow Chemical of Canada, Limited, Toronto, Canada

Murder—Distributors

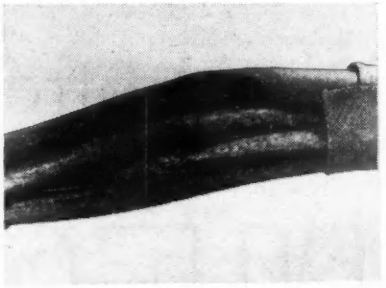
Continued from Page 75

Cause:

Defective High Tension Wires

Result:

High tension wiring has become overheated, and insulation has been burned. Shorting through at this point will be result. Even cracked insulation may cause engine miss when wires are wet and short through.

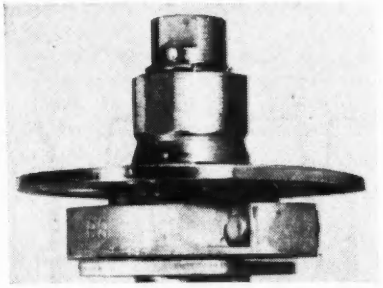


Remedy:

Replace high tension wiring when it becomes grease-soaked, cracked from heat, or frayed.

Cause:

Worn Cam



Result:

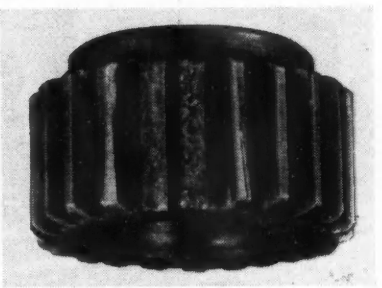
Shoulders of cam on distributor shaft have worn to a point where they will not open points properly. Missing at high speeds may be evidenced. Poor starting may result.

Remedy:

Replace entire distributor shaft. When extensive wear is noted, check entire unit as all parts may be worn badly.

Cause:

Defective Distributor Drive



Result:

Drive gear teeth have been stripped, resulting in complete failure.

Possible causes:

Frozen distributor shaft bearings, worn cam shaft bearings, loose distributor body mounting bolts. Check all possibilities when such failures occur.

END

(Please resume your reading on P. 76)

★★★★★★★★★★★★★★★★★★★★★★★★★

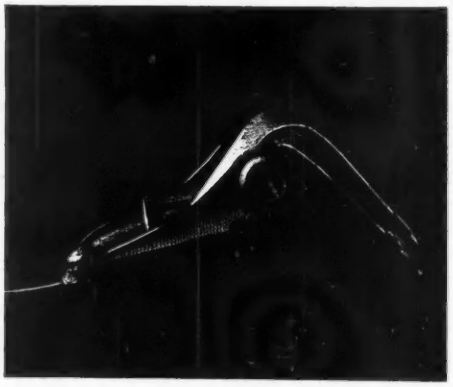
JOBSERVATION

Experience is what makes a young man do what an older man says is impossible

★★★★★★★★★★★★★★★★★★★★★★★★★

Stretch Your Mileage with





BLUE STREAK contact points

BLUE STREAK POINTS ARE 55.4% LARGER:

Increased contact area of high amperage tungsten reduces heat of arc-at-break; prolongs life. Points carry greater current without pitting or burning.

BLUE STREAK POINTS CUT COSTS PER MILE:

Our policy of inspecting every single part pays off . . . these points may cost a bit more initially, but their quality assures longer service life.

BLUE STREAK POINTS MEAN EASIER STARTING:

Full length copper shunt cuts down resistance, allowing the coil to deliver its full power.

Write us or see your jobber for details.

BLUE STREAK

STANDARD MOTOR PRODUCTS, INC.
37-18 NORTHERN BOULEVARD, LONG ISLAND CITY, NEW YORK



Putting the "Spring-back" in a PARISH Frame

The side rail of a PARISH Pressed Steel Frame shown in the illustration above is emerging from an automatically controlled heat-treating furnace 40 ft. long. This operation is being supervised by a metallurgist, and from annealing to tempering, there is no interruption or delay.

PARISH Heat-treated Frames, made of special steel and alloys, and formed by presses that have a capacity of 3000 tons have a strength value 125% greater than steels commonly used and because of their *"spring-back"* quality hold the parts attached to them in correct position in spite of rough roads and heavy loads.

Be sure when buying new trucks or making replacements to specify PARISH Pressed Steel Heat-treated Frame — the frame with the "spring-back" — "the keel of the chassis."

PARISH
Heat-Treated Frame

The Keel of the Chassis

PRESSED STEEL HEAT-TREATED FRAMES FOR TRUCKS AND TRAILERS

PARISH PRESSED STEEL CO. *Subsidiary of* **DANA CORP.**
READING, PA.

Western Representative: F. Somers Peterson, 524 Folsom Street, San Francisco, Cal.



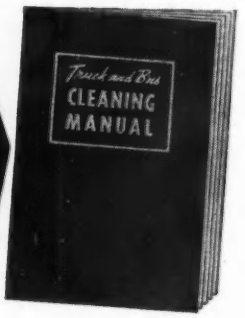
This school bus fleet, using Magnus Metaffin for 4 years, has entirely eliminated sludge troubles.

INSURE your fleet engines against sludge-caused damage . . . without paying high premiums for that insurance. There are no fancy prices for detergent type oils to pay when you use Magnus Metaffin. Metaffin gives you sludge insurance with regular oils or even reclaimed oils at a nice saving in your lube oil bills.

With Metaffin, you can "tailor-make" the sludge preventive qualities of your oil for each individual engine and for the kind of stop-and-go service that breeds sludge. Its use eliminates "sludgers" on which ordinary detergent oils have no effect.

Metaffin prevents sludge. It keeps all oil passages clear. Used regularly, it cuts your maintenance and repair bills for breakdowns caused by sticking rings and valves, burned-out bearings and clogged oil lines.

Write for YOUR FREE COPY



Try Magnus Metaffin for 30 days. If you're not completely satisfied—you pay nothing!

MAGNUS CHEMICAL COMPANY ● **38 South Ave., Garwood, N. J.**

In Canada—Magnus Chemicals, Ltd., 4040 Rue Masson, Montreal 36, Que.

Service representatives in principal cities

IN FLEET MAINTENANCE IT'S

Magnus

CLEANERS • EQUIPMENT • METHODS

Federal F105 . . .

Continued from Page 85

buretor, positive crankcase ventilation, large oil bath air cleaner, 3-point rubber mounted engine of new flexible type construction to eliminate noise and vibration, rubber-mounted propeller shaft bearings.

The unit is equipped with the 35,000 series Timken over-size front axle having a wide track of approximately 80 in., resulting in shorter turning radius and greater maneuverability. The rear axle is of the hypoid single-speed type with a 71½-in. track and a standard ratio of 5.28 to 1.

Large flexible springs of the bus type are furnished. Special heavy-duty front shock absorbers improve riding qualities. Front springs are 10 in. longer and ½ in. wider than regular springs usually specified, and rear springs are of the two-stage type. Other features include a 22-in. steering wheel with improved steering geometry, including a worm and roller type steering mechanism.

Sodium-Cooled Valves

SODIUM cooled exhaust valves will be used as standard equipment on 18 models using Federal Continental engines. The new valves have been incorporated in all 35, 45, 55, and 65 series trucks, in addition to the company's 635, 645, 663 and 664 six-wheeler line. All Federal engines of the T6371F, T6427F and R6602F series will be equipped with the valves. The valves, Stellite-faced and of the roto type, assure maximum engine efficiency and reliability.

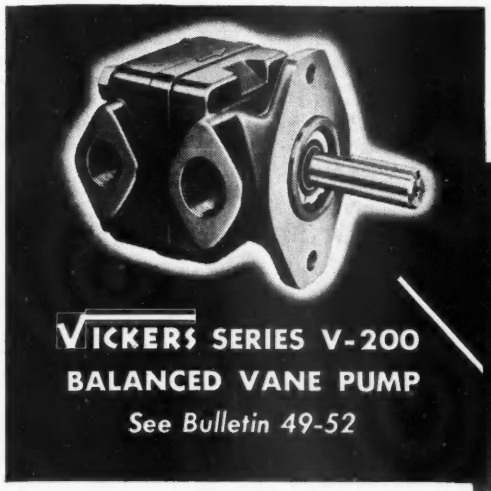
END

(Please resume your reading on P. 86)

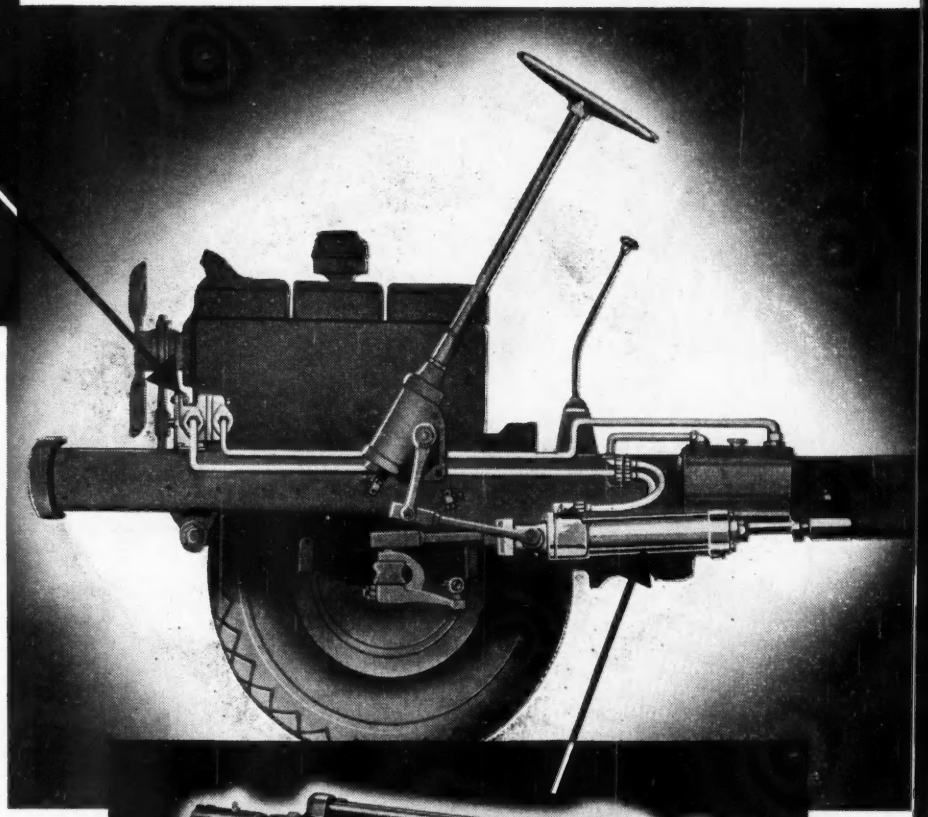


"It's a gentle reminder from the boss to keep it new."

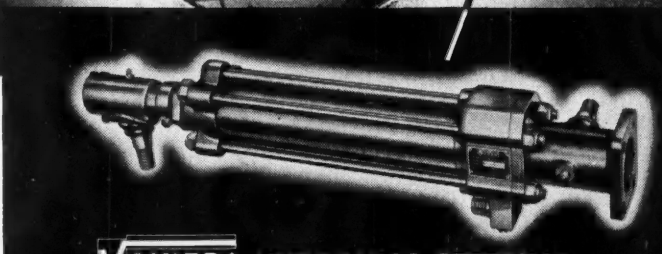
VICKERS Hydraulic Steering System COSTS YOU 20% Less THAN PREWAR



VICKERS SERIES V-200
BALANCED VANE PUMP
See Bulletin 49-52



At the current low prices, your new models should offer the added sales advantages made possible by VICKERS Steering System



VICKERS HYDRAULIC STEERING
BOOSTER with integral overload
relief valve . . . *See Bulletin 47-30a*

Improved design, better tooling and production methods of the past 10 years have resulted in a more than 20% price reduction in the Vickers Hydraulic Power Steering System. This saving greatly broadens the application possibilities of the Vickers Steering System.

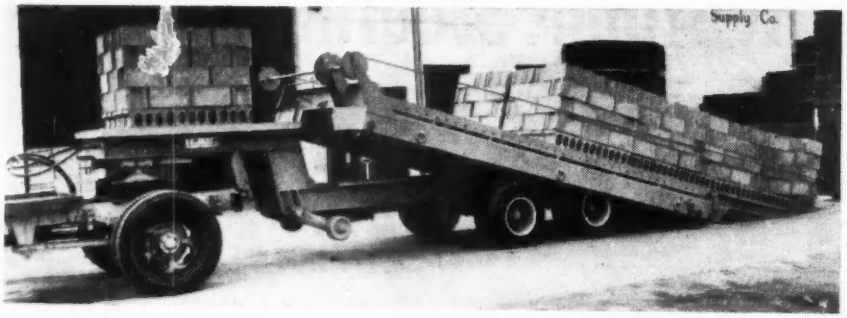
Important among the many advantages of the Vickers Steering System are safety, effortless steering, adaptability and operator satisfaction. The resulting substantial customer acceptance and preference for Vickers Hydraulic Power Steering System is evident from its specification as original equipment by an increasing number of mobile equipment builders and operators alike.

3987

VICKERS Incorporated
DIVISION OF THE SPERRY CORPORATION
1418 OAKMAN BLVD. • DETROIT 32, MICHIGAN

Application Engineering Offices:
ATLANTA • CHICAGO • CINCINNATI • CLEVELAND • DETROIT • LOS ANGELES • PHILADELPHIA • PITTSBURGH • ROCHESTER • ROCKFORD ST. LOUIS • SEATTLE • SUMMIT, N.J. • TULSA • WASHINGTON • WORCESTER

Tip-Top Conveyor Trailer for Cement Blocks



Arthur Rehberger & Son, Inc., Newark, N. J., is the builder of this Tip-Top Conveyor trailer for the cement block industry. Designed to overcome high unloading costs, the trailer's unique action permits the entire load of 8 cubes (75 blocks to a cube) to be deposited in one simple operation, without damage to the blocks. The average time-saving is estimated at between 1½ and 2 hours per load and no helper is required. An additional cube can be carried on the deck of the trailer. The rollers are ball bearing equipped and the load is controlled by three winch lines and a 16 in. disc type brake. The platform frame is hydraulically controlled as is the tailskid



Conference Corner

Continued from Page 10

There is a Place for All Three Methods

by V. M. Mantz

Director of Research
R. M. Hollingshead Corp.

"The soaps are generally the cheapest to use, as they have a low initial cost, but in the hard water areas ordinary soaps are partially decomposed by the salts in the water, and as a result, cleaning action is greatly decreased and very often a dull, streaky appearance is noted on the car surface.

"Synthetic type detergents are being widely used for general cleaning. The proper neutral types, that is, thos which have not been built up with alkaline salts, are the most desirable. The alkaline built up types with a high pH value around 9.5 or higher will have a bad effect on the waxed surface of the finish. A few applications of these alkaline cleaners will remove most of the wax.

"When a car body is in poor condition as indicated by a dull film which does not repel water after washing, then it becomes necessary to use an emulsion abrasive type cleaner properly called auto cleaner and polish.

Paste cleaners which contain harsher abrasives are not recommended for frequent use, but do a good job on badly scratched or scarred paint surface. The harsher abrasive removes much more of the paint surface and should only be used for the reasons stated above.

"To produce a more durable, bright finish, a combination cleaner and wax is recommended. With this type of product the dead pigment is removed and a durable wax film is applied in one operation. Such a treatment will last up to three months and will withstand regular washing with car wash, and will slow down the tendency for the paint film to be oxidized."



Now you can get better performance and longer life

Here is the spark plug that gives *full-range* ignition . . . long and trouble-free service . . . all-round satisfaction.

The Hastings Aero-type Spark Plug features a new, wider gap setting—assures steady spark at low or high speeds, when idling or pulling the steepest hill.

The Hastings Plug is built to aircraft standards. It has the insulator developed for fighter planes and superforts. And it is Performance Rated in the same way aircraft plugs are rated.

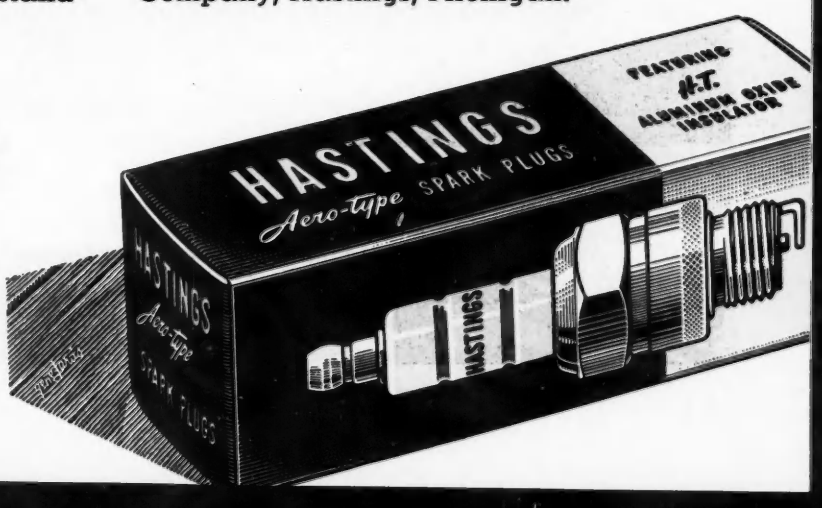
Important, too, each and every Hastings Plug is pre-tested by X-ray—for uniformity, for proper construction and heat flow.

You can install Hastings Spark Plugs—in cars, trucks, tractors—with complete confidence that they will deliver extra service. Spark Plug Division, Hastings Manufacturing Company, Hastings, Michigan.

$1.25 and worth it!

Retail List

If Hastings Spark Plugs are not yet available in your territory, write direct for illustrated catalog. Distribution is being developed as rapidly as possible—your jobber will be able to supply you soon.



Trailer Makers Discuss

AXLE & HIGHWAY LOAD LIMITS

THE THEORY of 18,000-lb axle loads and the whole matter of the load-carrying ability of modern highways and bridges got a thorough work out at the annual summer meeting of the Truck Trailer Manufacturers Assn. held recently in Chicago.

C. F. Rogers of the U. S. Bureau of Public Roads (formerly the Public Roads Administration) presented the BPR's now famous demonstration which has recently been making the rounds of trade associations and which attempts to show scientific proof of the damaging effect on both bridges and highways when axle loads exceed the 18,000 lb maximum.

While there were those at the meeting who doubted the degree of science involved in the calculations, all were pleased when the very same devices showed that with five axles it was perfectly possible to carry at least 80,000 without the slightest damage to the highways.

After some debate, Les Allman, Fruehauf vice-president summed up the thinking of many who were present with these remarks: "We are still in a stage of study and research. . . . I don't think we should settle for an 18,000 lb axle load until and unless we know more about the whole subject of highway construction and vehicle weights. . . . When an engineer asks us to settle for 18,000 lb per axle and 50 to 60-ft lengths, we ought to know whether that is sufficient right now and whether it will be all right for the future.

Under a heading of proposals to combat anti-truck sentiment and legislation, Luke Lucas, Kingham sales manager, made the suggestion that a fair something like that now sponsored by the railroads in Chicago would be worth looking into (see editorial on page 38).

Gets to Formside Quickly with Fabco Dual Drive

Ready mix concrete suppliers want to know that their trucks can get to any formside quickly and pour their load right on schedule. That is why so many of these firms choose medium duty production model trucks equipped with FABCO DUAL DRIVE for their hauling operations.

The Basalt Rock Company of Napa and San Francisco, California operate this BIR Dodge truck equipped with FABCO DUAL DRIVE. In city traffic this 4 by 5 yard mixer travels with the second rear axle declutched. This permits flexibility yet provides ample braking power and load carrying capacity. At the pouring site, the second axle is engaged—doubling traction. The mixer can easily drive over soft ground, adverse grades, or slippery surfaces, right up to the formside.

Write us, and we will send you a copy of our Dual Drive Bulletin.



29 Years in this Business

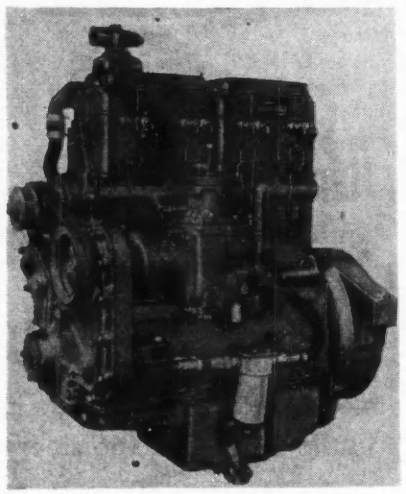
Fabco

F. A. B. MANUFACTURING CO.

1249 SIXTY SEVENTH STREET · OAKLAND 8, CALIFORNIA

Dual Drives · 6 and 10 Wheel Units · Logging and Highway Trailers · Frame Extensions

Cummins HRB-400 Diesel Develops 110 HP at 1800



This new high speed, 4-cyl. diesel engine, model HRB-400, now in production at Cummins Engine Co., Inc., Columbus, Ind. has a maximum rating of 110 hp at 1800 rpm. With a 5⅛-in. bore and a 6-in. stroke, it has a piston displacement of 495 cu in. The engine is equipped with standard two-valve heads, a new increased flow lubricating system, continuous groove main bearings, standard HR liners and head gaskets. This model is a 4-cycle engine and uses Cummins fuel system

Improvements Added to

FORD TRUCK LINE

ENGINEERING changes incorporated in Ford trucks in the 18 months following the introduction of the current series permit better adaptation of the trucks to a wider range of operation. Air brakes on 21,500 gvw rating F-8 series will be provided as optional equipment.

Heavy-duty three-speed transmissions are available as optional equipment for F-1, F-2 and F-3 series trucks. Ratios of these transmissions are: low gear, 3.714; second gear, 1.871; third gear, direct; reverse, 4.588.

A 176-in. wheelbase model has been added for the F-5 and F-6 series. The F-7 and F-8 series have additional wheelbase lengths of 147 and 178 in.

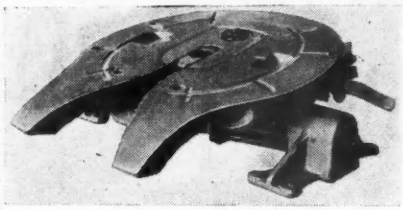
F-7 series trucks are now equipped with dual cylinder type 15 x 5 in. rear brakes. The 145 hp engines in both F-7 and F-8 series now have new type exhaust valves which are free to rotate in the valve guides when valves are lifted, aiding in proper seating and tending to prevent the formation of deposits on valve stems and in valve guides. A new camshaft and new solid adjustable tappets also have been installed.

Double channel type frames on F-7 and F-8 series provide abundant strength to resist strains imposed by heavy loads and the severe conditions under which these extra heavy duty units frequently are called upon to operate.

Single-speed rear axles are now available for series F-6 and F-8 models. The mgv weight rating of 15,500 and 16,000 lb for the F-6 conventional and cab-over-engine models and 21,500 lb for the F-8 series remains the same with either single or two-speed axles.

Forward control type parcel delivery chassis are offered in 104 and 122-in. wheelbase lengths. Maximum gross vehicle weight rating of both models is 7800 lb.

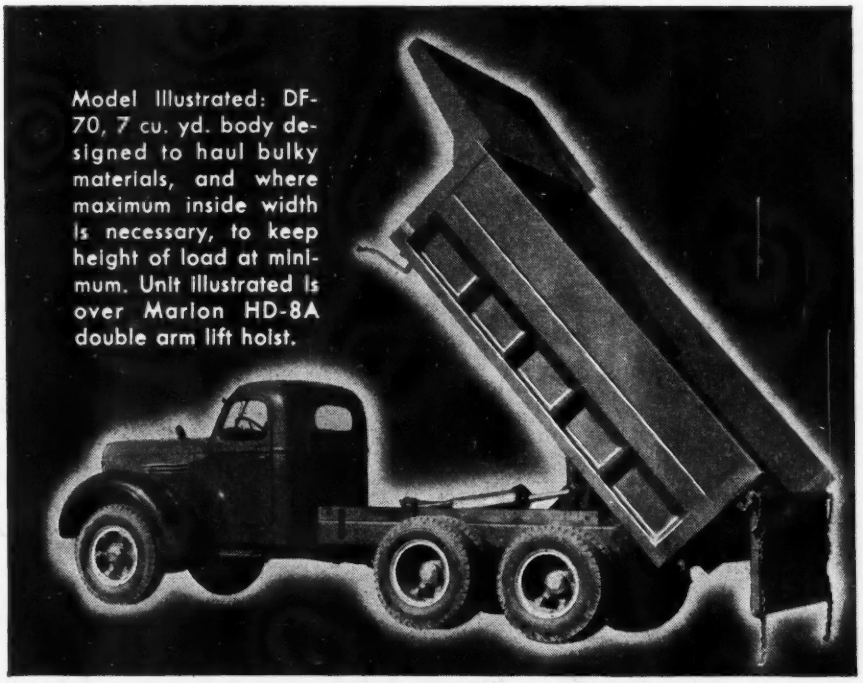
34-in. Fifth Wheel Stabilized Against Tilt



A 34-in. side-oscillating 5th wheel with machine-finished bearing areas, bronze bushings, and new method of controlling oscillation features renewable wearing parts. It prevents damage from twisting strains on tankers and other trailers.

Sidewise tilting is controlled by two resilient rubber stabilizers under each side of the plate which is free to oscillate, unchecked, 1 deg. either way. Use of two independent cushioning elements makes control both gradual and positive, while preventing the over-compression of either cushioning member.

This new coupler, called the Dual-Control Side-Oscillator, features bronze-bushed brackets, 20 sq. in. of reserve bearing area, three-point locking. American Steel Foundries, Automotive Division, Chicago, Ill.



Model Illustrated: DF-70, 7 cu. yd. body designed to haul bulky materials, and where maximum inside width is necessary, to keep height of load at minimum. Unit illustrated is over Marion HD-8A double arm lift hoist.

Profitable Hauling Starts with "On The Job" Design

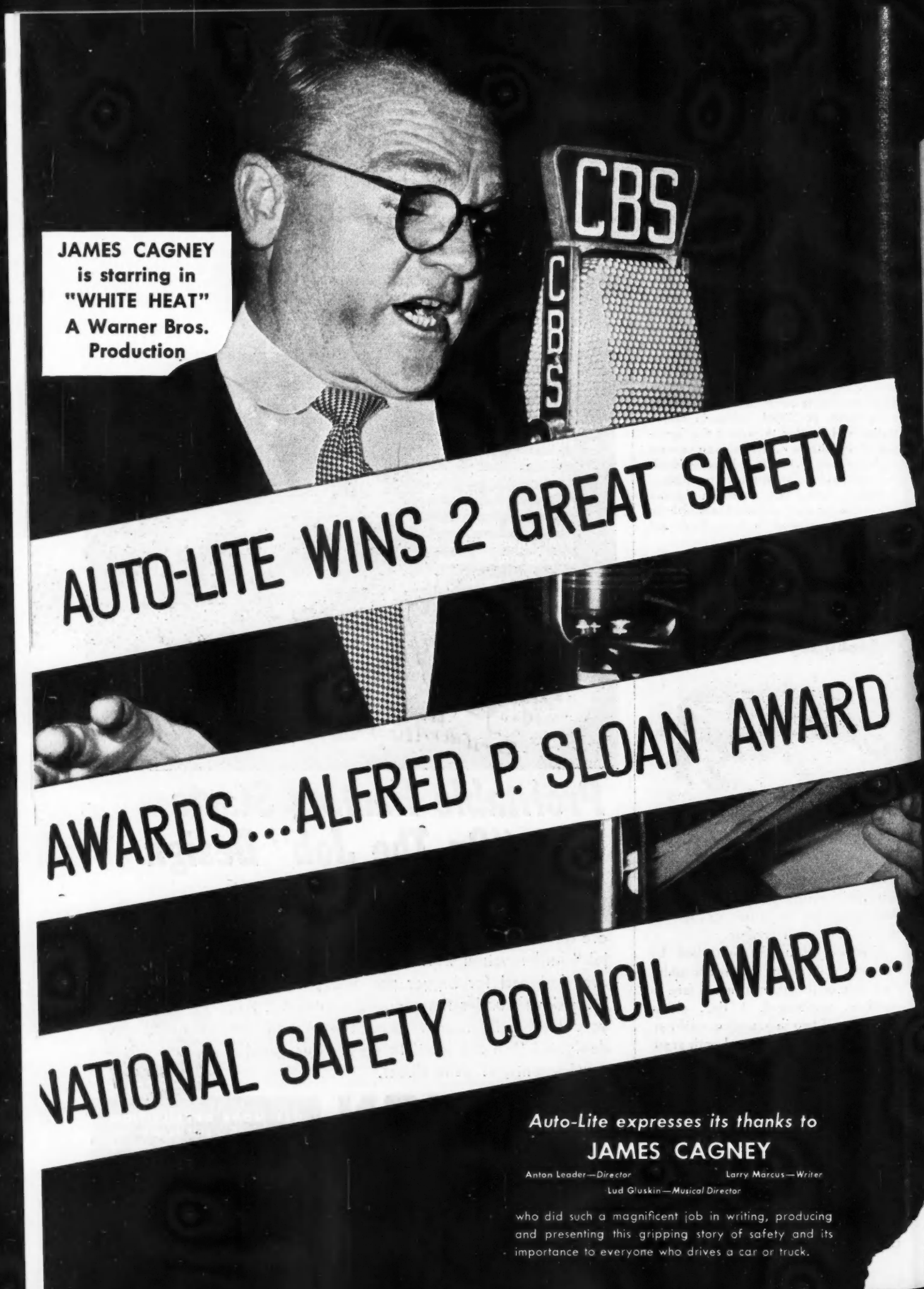
It's easier to meet the profit problems of your hauling job with Marion. Because Marion units are developed by engineers who go out "on the job" under actual working conditions . . . they are designed for bigger payloads with fewer breakdowns under the roughest treatment. Ask your Marion Distributor about the Marion unit designed "on the job" to meet your special requirements, or write direct.



MARION
DUMP BODIES and HYDRAULIC HOISTS

GET MORE DETAILS NOW
Just mail a post card or letter for the complete Marion catalog, or ask your Marion Distributor.

MARION METAL PRODUCTS CO., MARION, OHIO



AUTO-LITE WINS 2 GREAT SAFETY AWARDS...ALFRED P. SLOAN AWARD

...NATIONAL SAFETY COUNCIL AWARD...

Auto-Lite expresses its thanks to

JAMES CAGNEY

Anton Leader—*Director* Larry Marcus—*Writer*

Lud Gluskin—*Musical Director*

who did such a magnificent job in writing, producing and presenting this gripping story of safety and its importance to everyone who drives a car or truck.

NATIONAL SAFETY COUNCIL'S Public Interest Award

ALFRED P. SLOAN Radio Citation for Highway Safety



Both to "Suspense!"

SPONSORED BY

AUTO-LITE

SPARK PLUGS · BATTERIES · WIRE & CABLE · IGNITION SYSTEMS



"Believe Me—
there's no finer tandem—



This simple, rugged, and compact design—proved in thousands of successful installations—is the reason why the Hendrickson tandem gives such outstanding performance.

Believe Me—there's no finer tandem."

HENDRICKSON TANDEM

"Follow the Leader"

HENDRICKSON MOTOR TRUCK COMPANY

8001 West 47th Street • Lyons (Chicago Suburb) Illinois

New Products . . .

Continued from Page 52

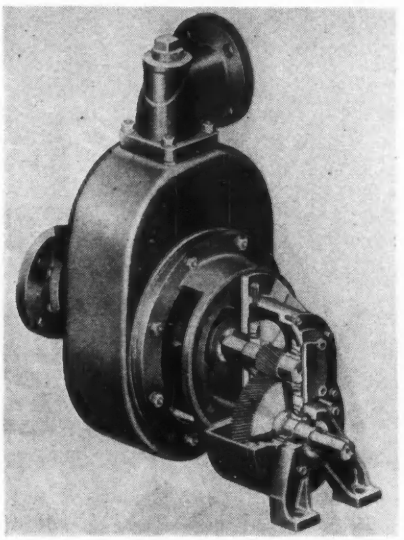
ture and sub-atmospheric pressures together with complete filtration. It performs a complete re-refining process on used lubricating oils, rendering them ready for re-use at quality levels, according to the manufacturer.

The machine is described as a complete refining unit designed to remove all carbon, acids, metal particles, water and dirt. Used oil so processed is ready for re-use at substantial savings.

Refiner is 25 in. in diameter, 44 in. in height, and weighs 300 lb. It can operate on 110 or 220 volts 60 or 25 cycles, single or 3-phase A. C. current. Its capacity is 3½ gal. at a time. Automatic Oil Refiners, Inc., Orchard Park, N. Y.

P115. Tank Truck Pump

A self-compensating shaft seal provides drip-proof operation on the Type G power take-off tank truck pump now on the market for petroleum tank trucks, transports and aviation refuelers. It has the advantage of self-priming centrifugal operation and is manufactured in 2 and 3-in. sizes, high and low pressure, with capacities from 20 to 200 gpm. Marlow Pumps, Ridgewood, N. J.



P116. Tune Up Gage

A quick checkup of engines is obtained with this new type gage. Having a multi-colored dial it is calibrated to provide helpful ideas on

(TURN TO PAGE 150, PLEASE)

"OLD-TYPE GASKETS COST MONEY IN NEW HIGH COMPRESSION ENGINES,"

Says P. J. FITZGERALD



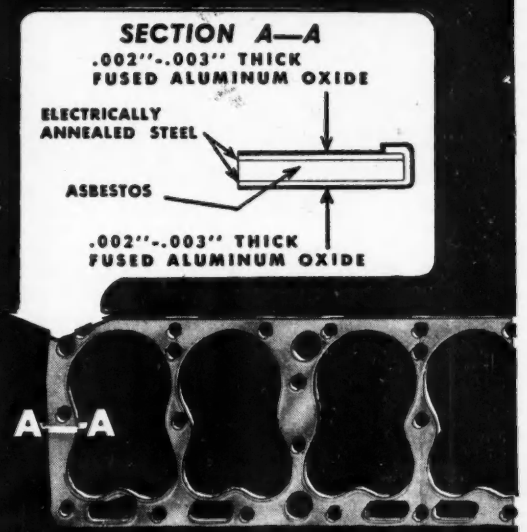
"IT PAYS TO USE NEW FITZGERALD METALLIC ALUMINUM-FUSED-OXIDE STEEL ASBESTOS GASKETS*"

"High compression motors generate such high pressures and heat that head gaskets made from conventional materials deteriorate rapidly and need frequent replacement—

THAT COSTS MONEY!

"To eliminate this source of trouble and expense, we developed Fitzgerald Metallic Aluminum-Fused-Oxide Steel Asbestos Gaskets.* Because they stand up where others fail, it pays to use them."

P. J. Fitzgerald
PRESIDENT



Steel, specially tempered for toughness and resiliency, provides strength in combination with fused aluminum oxide for easy removal and rust prevention, and high-grade asbestos filler . . . for a lasting, perfect seal.

Grease Retainers—Cork Gaskets
FITZ-Rite* Treated Fiber Gaskets
for oil, gasoline and water connections
COMPLETE SETS FOR MOTOR REBUILDERS

*Service Mark Registration Pending

FITZGERALD Gaskets
SINCE 1906

THE FITZGERALD MANUFACTURING COMPANY
TORRINGTON, CONNECTICUT

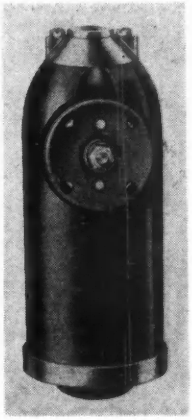
THERE'S A FITZGERALD GASKET FOR EVERY ENGINE

New Products . . .

Continued from Page 148

where the trouble lies and what remedial steps should be taken. The gage comes in three sizes, No. 90, 95 and 110, weighing two, four and 5½ lb respectively. A comprehensive color chart, complete with trouble-shooting information accompanies the gage. Universal Chemists, Inc., Boston, Mass.

P117. Moisture-proof Coil



A moisture-proof heavy-duty coil which has both primary and secondary windings evacuated in oil is said to encourage easier starting regardless of weather by insuring a permanently controlled high voltage output for a stronger spark. Known as the Master Coil, it comes in both six and 12-volt designs. Holly Carburetor Co., Detroit.

Late Product Flashes

Albertson & Co., Inc., Sioux City, Iowa, Sioux valve cleaner providing a fast easy method for cleaning dirty valves up to 2½-in. dia and ½ in. stem.

Greyhound A.C. Arc Welder Corp., Brooklyn, N. Y., completely portable and self-operating spot welder which saves time on outside repair jobs.

Plomb Tool Co., Los Angeles, Cal. two new Proto pullers: Short rod No. 4056RS to permit using slide hammer in tight spots and puller jaw No. 4027 for medium pullers.

Independent Pneumatic Tool Co., Aurora, Ill., new Thor rotary pneumatic tool to drive screwsticks, eliminating need for picking up and starting screws by hand.

Federal-Mogul Service, Detroit, Mich., complete engine sets to include laminated brass shims for engine bearing assemblies, shims being cut to shape for each job.



BIEDERMAN

The All-Star Truck

★ Advanced Design
★ Ready Accessibility of all Parts
★ Sturdy Construction
★ Dependable Power
★ Capacity for Big Loads

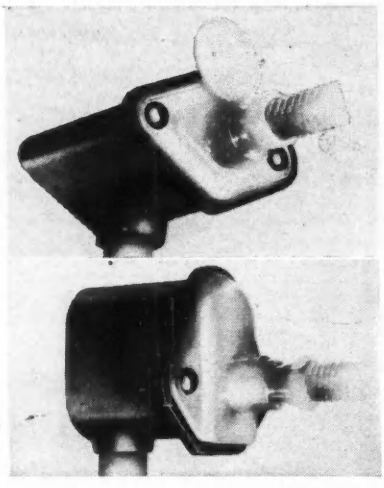
FLEET OPERATORS

FIND THE ANSWERS TO THEIR PROBLEMS WITH BIEDERMAN TRUCKS. WIRE OR WRITE BIEDERMAN MOTORS CORPORATION, CINCINNATI 14, OHIO.

BIEDERMAN MOTORS CORPORATION
CINCINNATI 14, OHIO

P118. Trailer Connector

Mounting of trailer connectors is improved through use of a new series of lightweight, water-repellent trailer connector boxes. Two holes are provided in back for mounting as well as two mounting screws and lock washers for the connector socket.



No. 1179 box (top) standard Cole-Hersee connector sockets No. 1185, 1192, 1195 and 1198 by trimming rear of socket shell; and a new series of sockets No. 1200 to 1207. No. 1180 (below) is for socket No. 1171 only. Cole-Hersee Co., Boston.

(TURN TO PAGE 152, PLEASE)

Extra smoothness, zip and power!!





After a... 

CĀSITE TREATMENT

CASITE IN THE CRANKCASE — **CASITE THROUGH THE AIR INTAKE**

According to directions on container

Get rid of engine kicks, jerks and sputters—get rid of binding gum and goo—with the simple Casite Treatment.

The Casite Treatment is inexpensive, sure—and takes only a few minutes. Casite through the air intake frees sticky valves and rings, releases zip and power. Casite in the crankcase speeds lubrication—gets oil around quickly and into the tight spots—retards wear, cuts repair bills.

Fleet owners and operators everywhere specify regular Casite Treatments as standard maintenance procedure for all equipment. It will pay you to get your fleet into the Casite habit.

THE CASITE CORPORATION • HASTINGS, MICHIGAN

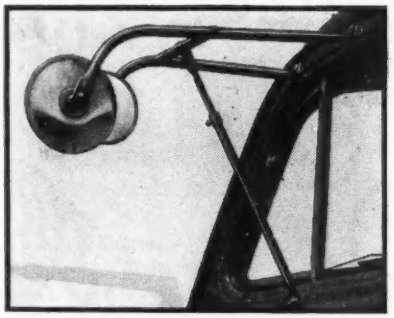
OUTSELLS ALL THE REST

New Products . . .

Continued from Page 150

P119. Passing Eye Mirror

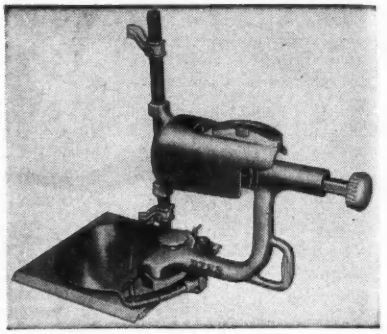
This mirror assembly provides a full view of conditions in oncoming lanes ahead of the vehicle, eleminating the need for pulling out of line to judge passing safety. The passing eye is mounted on the driver's door and does not interfere with vision in any direction, nor confuse use of regular view mirror. With braced



arms to minimize vibration, the assembly comes in two sizes of mirrors which give full view without reduction in image size. Norlipp Co. Chicago.

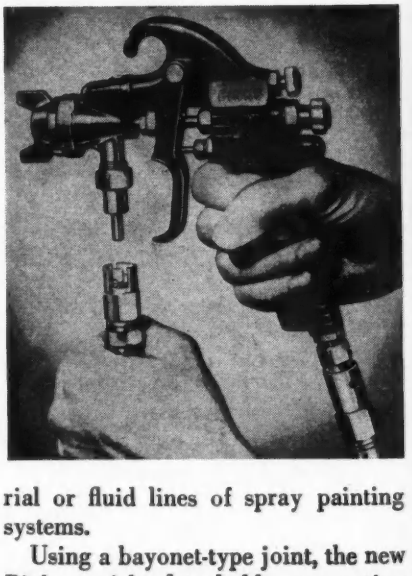
P120. Alignment Gages

A new set of alignment gages, equally adaptable to use on new low fender cars and other models is said to speed up all five alignment angles —caster, camber, toe-in, king pin inclination and turning radius. Consisting of right and left units, these gages can be used either on an alignment rack or on a light track floor. Bear Mfg. Co., Rock Island, Ill.



P121. Line Connection

A quick-detachable connection that will shut off fluids under pressure when the hose connection is broken and instantly restore the flow when the connection is re-established, has been developed for use in the material or fluid lines of spray painting systems.



Using a bayonet-type joint, the new Binks quick-detachable connection can be made or broken, almost instantly, with a slight turn of the wrist. No time is lost matching threaded connections or tightening couplings. Binks Mfg. Co. Chicago Ill.

(TURN TO PAGE 188, PLEASE)

NEAPCO 1500-1600 SERIES

POWER TAKE-OFF JOINTS

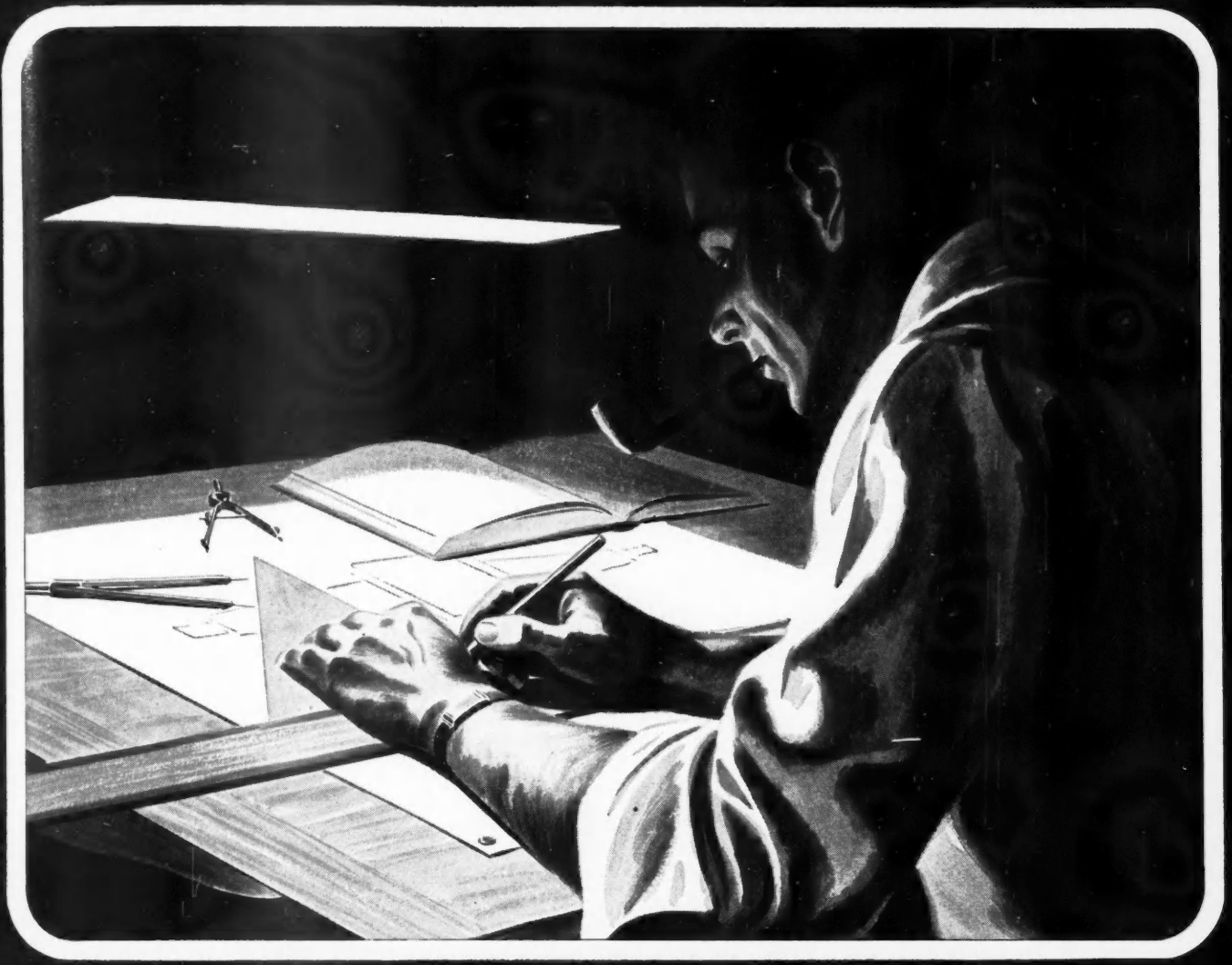


For dump bodies, winches, road graders, farm equipment, etc.

Selected as standard, original equipment by several leading manufacturers. Rugged, precision built. High torque capacity, long service life. End yokes solid forgings. For slow speed intermittent service—specify 1500 Series plain hardened steel bearing and bushing. For increased load and continuous service use 1600 Series needle roller bearings. 5 popular bore sizes are stocked by your Neapco Jobber. Other bore size combinations are available. He can order them for you.

See your Neapco Jobber for these fine PTO's.

Neapco Products Inc. NEAPCO Pottstown, Pa.



Spicer and Spicer alone . . . *can assure you this priceless heritage of Engineering Experience*

Spicer has grown up with the automotive industry. Spicer developed the first successful universal joint for automotive power transmission needs. During the past 45 years, Spicer has worked hand in hand with the manufacturers of every type of automobile . . . employing every type of motive power . . . and using every type of power transmission principle. This experience is priceless . . . unequalled in the industry . . . and daily is being converted into sound engineering principles that set the standards for the automotive world.

Let the Spicer hand of experience help guide you to successful design in the plans now on your boards.

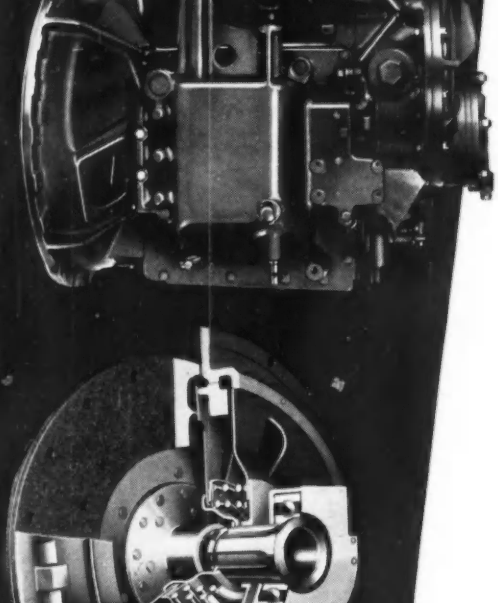
Designing, Developing, Engineering, Manufacturing and Service

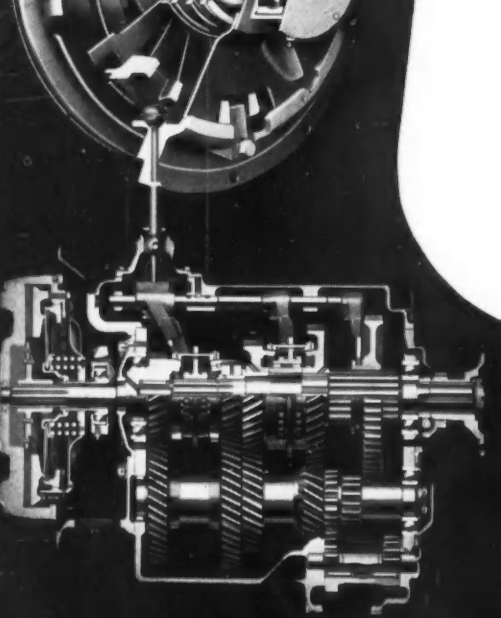
Spicer











Spicer and Spicer alone...

can assure you this complete range of products from one source

Spicer has progressively BUILT FOR YOU during the past 45 years. BUILT FOR YOU with skill guided by the wisdom of experience. BUILT FOR YOU a range of products covering every need in the automotive power transmission field. BUILT FOR YOU a plant that employs the industry's most advanced production techniques and equipment.

The designing and manufacturing skill gained from producing millions and millions of Spicer units is used by a majority of manufacturers in the truck, bus and passenger car fields. Look to Spicer for assistance that BUILDS FOR YOU . . . all the way from the drawing board through to service in the field.

45 YEARS OF Spicer SERVICE

SPICER MANUFACTURING

Division of Dana Corporation • TOLEDO 1, OHIO

TRANSMISSIONS
TORQUE CONVERTERS

PASSENGER CAR AXLES • CLUTCHES • PARISH FRAMES • STAMPINGS • UNIVERSAL JOINTS
SPICER "BROWN-LIPE" GEAR BOXES • RAILWAY GENERATOR DRIVES

Runaround . . .

Continued from Page 30

emption accorded motor carrier employees—drivers, helpers, loaders, mechanics. The Senate bill, unless amended on the floor during debate, likewise carried no change in the motor carrier exemption.

While it applies basically to manufacturers, a change of general interest was the revised definition which held that a worker was not held engaged in "production of goods for interstate commerce" unless his job was "indispensable" rather than "necessary" as previously worded.

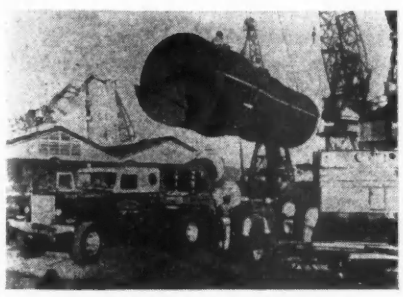
Ideal Cement Co. Files Answer

Preliminary to forthcoming hearings, the Ideal Cement Co., of Denver has filed an answer with the Federal Trade Commission, in which it denies that previous or current pricing policies have discriminated against customers who prefer trucking rather than rail delivery.

For 18 months prior to July, 1948, the cement manufacturers had charged .20 a barrel more when customers took truck delivery from the Portland and Boettcher (Colorado) plants. The firm holds that this was necessary as a matter of additional sales and handling costs, etc. Then it switched to selling "primarily" in carload lots, charging the .20 extra only for less than carload amounts.

Last December, FTC was told, this "temporary" practice was dropped in favor of the present policy—selling at a standard price but "only in carload lots in one delivery operation and without regard to method of transportation."

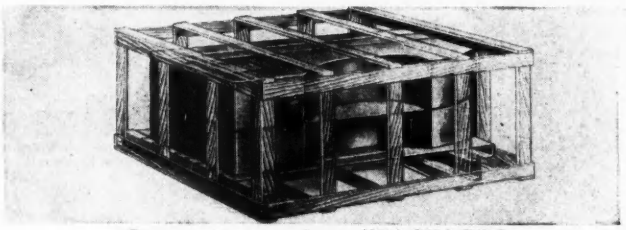
(TURN TO PAGE 156, PLEASE)



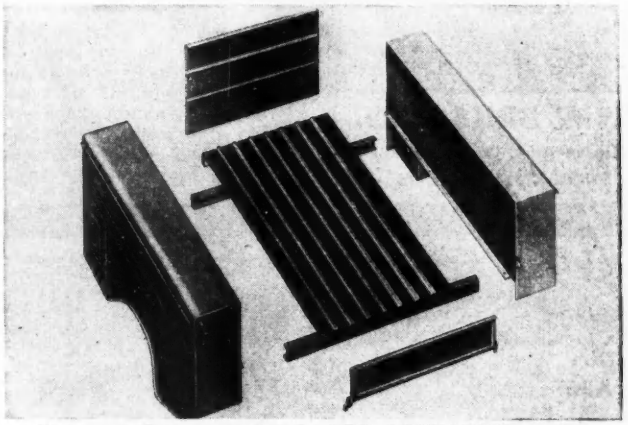
Biggest There Is!

A 30-ton cement kiln, being unloaded at the docks of Durban, Africa, is an easy load for this giant, 275 hp. Ward LaFrance tractor which recently went into operation over Africa's mountainous terrain. Said to be the world's largest tractor, the vehicle is capable of handling loads in excess of 50 tons. Two transmissions with 15 different speeds enable it to travel from above 50 mph to one mph on grades

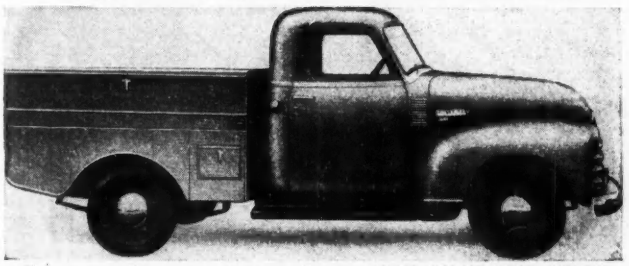
HERE'S THE NEW WAY TO BUY YOUR SERVICE BODY and Save up to $100!



Comes to you in a "PACKAGE"



You get five completely PRE-ASSEMBLED units



Four to six man hours later: THE FINISHED JOB!

Shown above is the No. 60-KD ½ ton Service Body. Also available, either knocked down or completely assembled, are models for ¾ ton and 1 ton chassis.

WRITE US FOR MORE DETAILED INFORMATION AND PRICES ON THE

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ECONOMY SERVICE BODY . . .



By the makers of *Craftsman Bodies*

Preferred BY THE MEN WHO DO THE WASHING

LACO FOUNTAIN BRUSHES

because They Give an Easier, Faster and Better Job



Bejin Cartage Company, one of Detroit's largest fleet operators standardizes on Laco Fountain Brushes.



● Laco Fountain Brushes cut fleet cleaning costs—for it washes better, faster, and is easier on the men doing the job. Brush is made for heavy duty use. All parts are made of aluminum alloy—strong but lightweight—a real time and money saver. Write for prices and name of nearest dealer.

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2000 Brooklyn Ave., Detroit 26, Mich.
BRUSH MANUFACTURERS SINCE 1855

FAMOUS EXAMPLES OF ARMORED CONSTRUCTION

1. U. S. ARMY "GENERAL PATTON" TANK



2. AMERICAN HEAVY DUTY UTILITY SNATCH BLOCK



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Dropped, slammed and battered on the job, blocks and sheaves have to be tough! *Armored Construction* makes AMERICAN Heavy Duty Utility Snatch Blocks serve better, last longer. Rigged quickly, too . . . just lift the hook and lay in the rope. In three sheave sizes, ten-ton capacity, handling up to ⅞" wire rope. Sold by distributors everywhere. Made by AMERICAN HOIST AND DERRICK CO., St. Paul 1, Minn.

ASK FOR AMERICAN BLOCKS AND SHEAVES

ALSO MAKERS OF THE AMERICAN HANDIWINCH AND GENUINE CROSBY CLIPS

Runaround . . .

Continued from Page 155

In other words, truck pick-up is permitted if the buyer can arrange for enough trucks to handle the order in one loading operation.

In denying FTC charges, Ideal made it clear that it plans to continue the present policy holding that it is "in all respects lawful . . . in no way discriminatory . . . (and has) no effect which may be substantially to lessen or adversely affect competition."

Uniform Insurance Standards

Conferences leading toward uniform insurance standards for the trucking industry are going into their final phases.

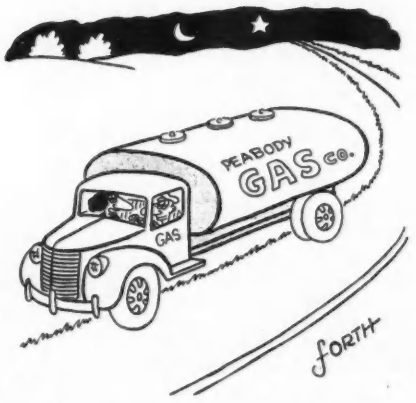
Representatives of the trucking and insurance industries are now drafting in final form the new standards which are aimed at cutting losses from fire, theft, and accidents.

Among the various factors being considered by the conferees are the selection of personnel, training of personnel, mechanical safety, fire prevention, and cargo protection. The trucking industry insurance advisory committee says adoption of the standards by trucking firms can result in "one of the surest methods of cutting losses and thus reducing insurance costs."

According to present plans, the adoption of the new standards by any trucking company will indicate that an operation is "satisfactory" safety-wise. And, although the standards will be considered vitally important and may have a significant bearing upon the insurability of a truck operation, they will not be considered mandatory, according to Ted V. Rogers, chairman of the advisory committee.

END

(Please resume your reading on P. 35)

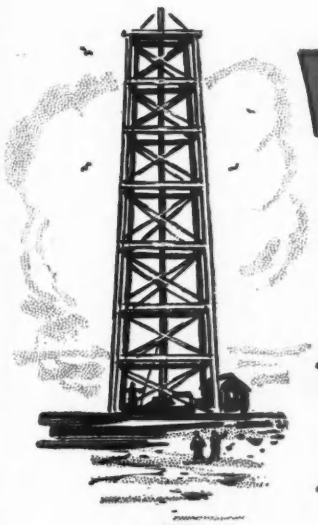


"I suppose you're out of gas!"

NATURE'S BEST IS TOUGH TO BEAT



NATURE EQUIPS BATS WITH A SUPER-SENSITIVE "MICRORADAR" SYSTEM WHICH ENABLES THEM TO FLY THROUGH A PITCH-DARK ROOM WITHOUT COLLIDING WITH THE SLIGHTEST OBSTACLE. SCIENCE HAS YET TO PERFECT RADAR RIVALING NATURE'S IN ACCURACY.



AND

VEEDOL 90 H.D.

PICKS NATURE'S TOUGHEST CRUDE... BECAUSE NATURE'S TOUGHEST CAN'T BE BEAT!

Every drop of oil in VEEDOL 90 H.D. is refined from 100% Bradford, Pa., crude—the crude which experts agree is nature's toughest. Scientific refining improves any crude, but *nature's toughest STAYS the toughest, and nature's toughest STANDS the toughest beating under brutal, heavy duty conditions.*

That's why VEEDOL 90 H.D. is naturally tougher, naturally so much more resistant to heat and wear. That's why VEEDOL 90 H.D. gives the famous "film of protection" to guarantee greater mileage between overhauls.

VEEDOL
OILS AND GREASES

FEDERAL TIRES

"GOOD FOR A LONG SAFE RIDE"

TIDE WATER ASSOCIATED OIL COMPANY

NATURE PLUS! MAN-MADE ADDITIVES WORK MIRACLES IN VEEDOL 90 H.D.!

VEEDOL 90 H.D. is a compound of scientifically-selected additives, blended perfectly in naturally-stable Bradford, Pennsylvania, oil, to reduce sludge and gum formation, protect bearings from corrosion, minimize lacquering of pistons and valve stems... all with full-throttle operation.

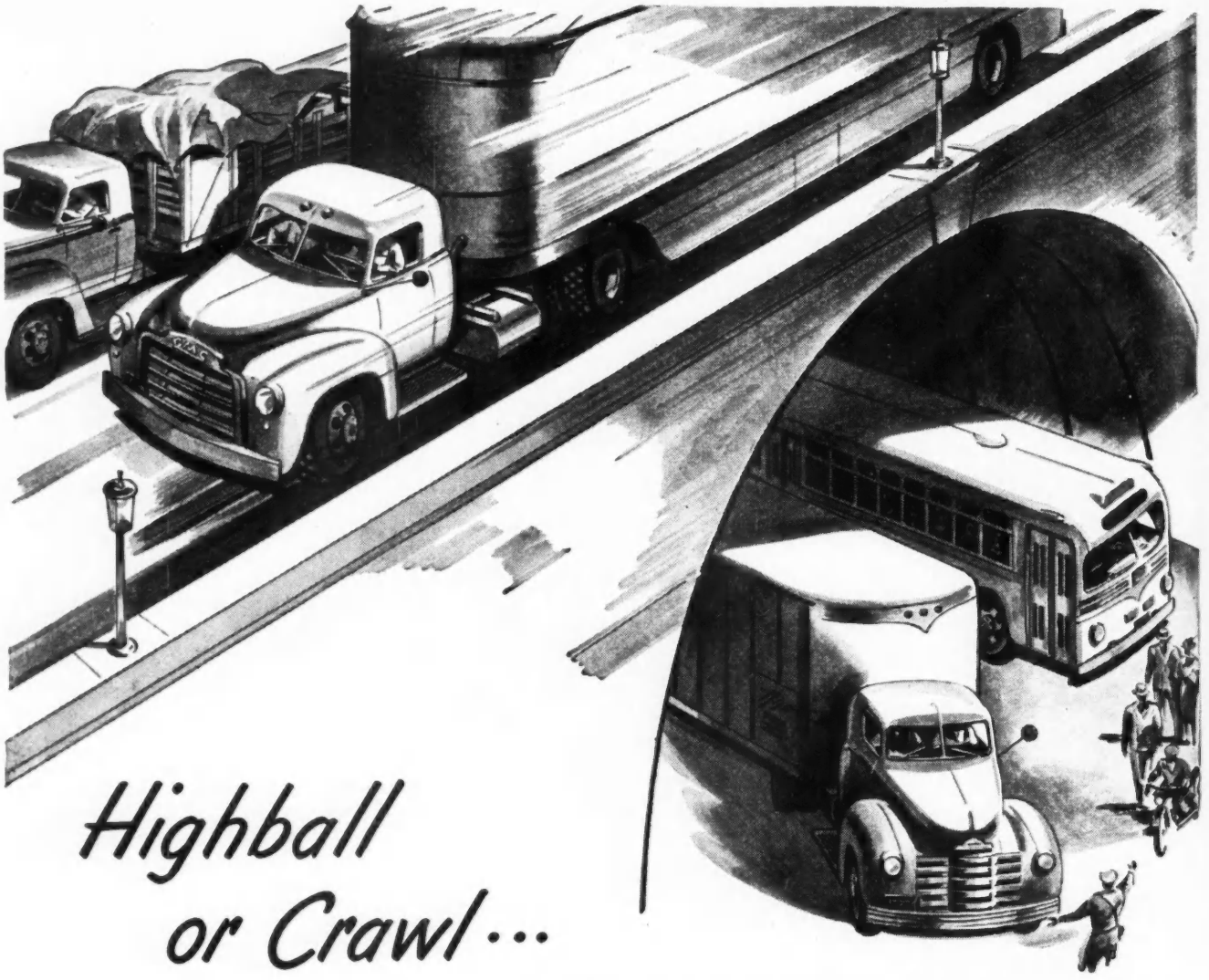
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A lot of sound engineering and honest manufacturing goes into Delco-Remy electrical equipment . . . to make it perform right whether the driver is eating up miles on the highway or snaking his load through traffic.

That's one reason why Delco-Remy is original equipment on leading makes of trucks and buses.

Maintenance men, too, recognize honest quality when they see it. They use Delco-Remy parts and units for repairs and replacement on all Delco-Remy-equipped vehicles in the shop. And they like the fact that Delco-Remy parts for old models or new are immediately available through a nationwide and wide-awake distributing organization.

The men in the shop do a real job for drivers, front office, *and themselves,* with Delco-Remy original equipment replacement parts.

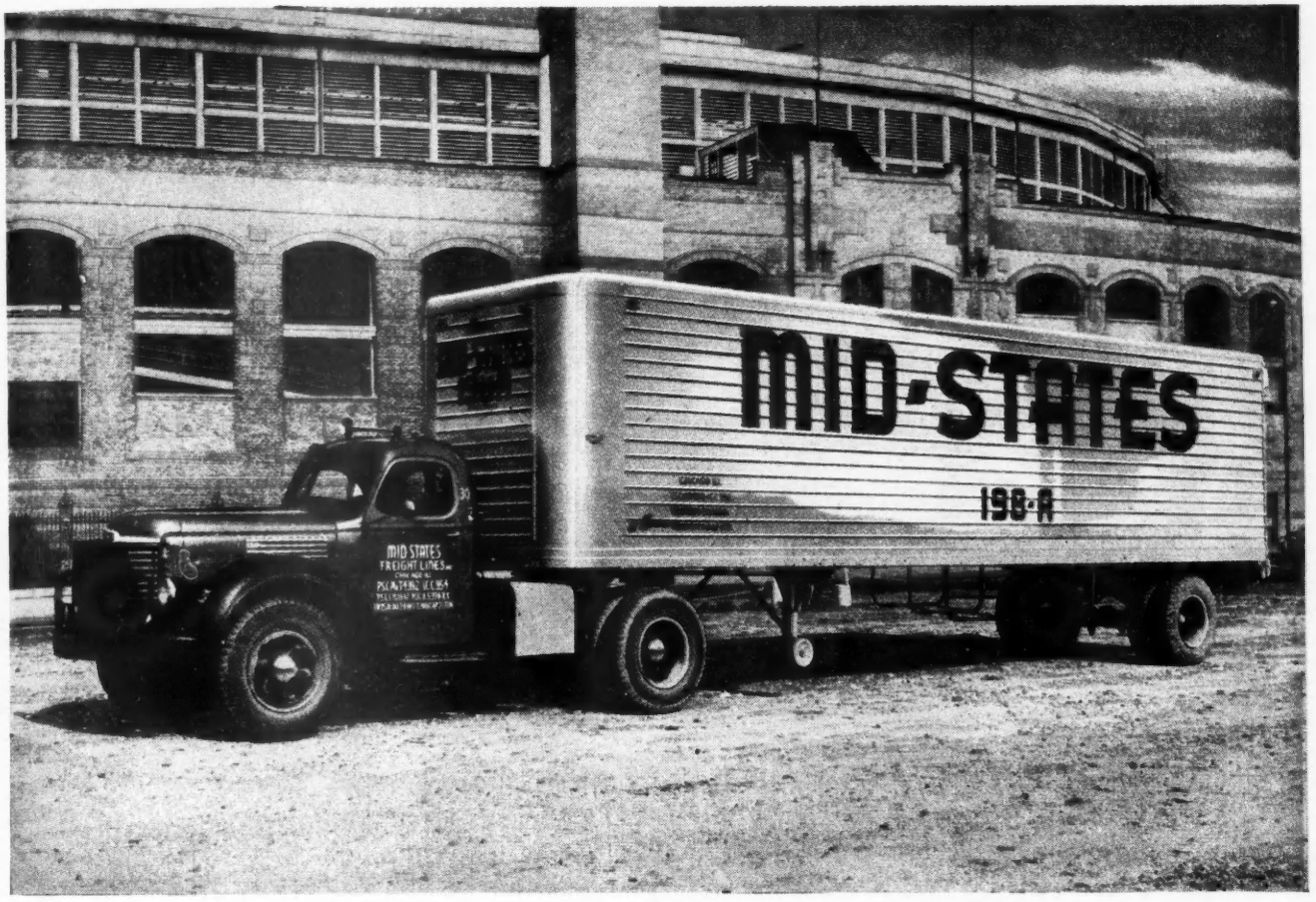
UNITED SERVICE MOTORS

DELCO-REMY—A UNITED MOTORS LINE
Available Everywhere Through
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ANDERSON, INDIANA

WHEREVER WHEELS TURN OR PROPELLERS SPIN

MID-STATES CHOOSES BROWNS



for Bigger Payloads and Profits

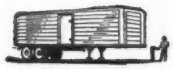
WATCH Mid-States' fleet of Brown Lightweight More-Freight Aluminum Trailers grow. Why? Because this leading freight line found from first-hand experience that—"the scale tells the tale." Brown Lightweight Aluminum Trailers mean more payloads — bigger profits. That's on Mid-States' record now just as it is on the records of an increasing number of the country's major freight lines.

There's a reason why Brown Lightweight Aluminum Trailers are going ahead. Put a Brown on the scale, and you'll see for yourself. Not promises and claims — but light weight proved on the scale. Brown Trailers are automatically print-weighed as they leave the plant and the certificate furnished to the purchaser.

NOW—Brown Guarantees Trailer Weight

WEIGHT GUARANTEE CERTIFICATE

Brown now guarantees the delivered weight of your trailer made to your specifications. Ask your Brown distributor about the guarantee weight plan and how Brown backs up its guarantee with cold cash.



"The Scale Tells The Tale"

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Box 54, Spokane, Wash.
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Sale and Service In: Akron, Atlanta, Chicago, Cincinnati, Cleveland, Denver, Detroit, Fort Worth-Dallas, Fresno-Sacramento, Great Falls, Indianapolis, Jacksonville, Kansas City, Los Angeles, Milwaukee, Minneapolis-St. Paul, Omaha, Portland, Richmond, St. Louis, Salt Lake City, San Francisco, Seattle, Spokane, Toledo.

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for Panel Delivery,



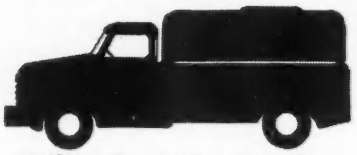
Retail Delivery,



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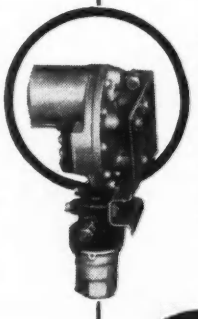
Approved by Underwriters' Laboratories.

- ***Heats Hot in 60 seconds!***
- ***Delivers 18,000 BTU/HR!***
- ***Thermostatic Heat Control Available!***
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In 60 seconds flat, this compact new South Wind "979" starts billowing 18,000 BTU's of heat per hour throughout your vehicle . . . protecting your cargo from possible damage or loss! The driver and crew also ride in safe comfort in coldest weather.

Exclusive South Wind "Safety-Sealed" design completely separates the combustion and exhaust air from the Ventilating System. Dangerous combustion fumes and vapors *cannot* contaminate the ventilating and heated air flow, inside the vehicle. And this efficient, safety-engineered unit is of all-welded, stainless steel construction for trouble-free, long-life performance.

Easy to install on the floor of almost any commercial vehicle, this reliable new "Safety-Sealed" heater is available with manual or thermostat control. Maintains whatever temperature the driver selects. Wherever you mount the sturdy steel heater case, in the cargo or crew compartment, this efficient forced-air unit pours safe, steady heat into every corner of the vehicle interior.



THIS SUPER-SAFETY PRESSURE VALVE, installed at the fuel source, insures the utmost safety, efficiency and economy of heater ignition and operation.

WRITE NOW for full details on how this outstanding new development brings greater safety, comfort and dependability to commercial vehicle heating.

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Another Product of STEWART WARNER

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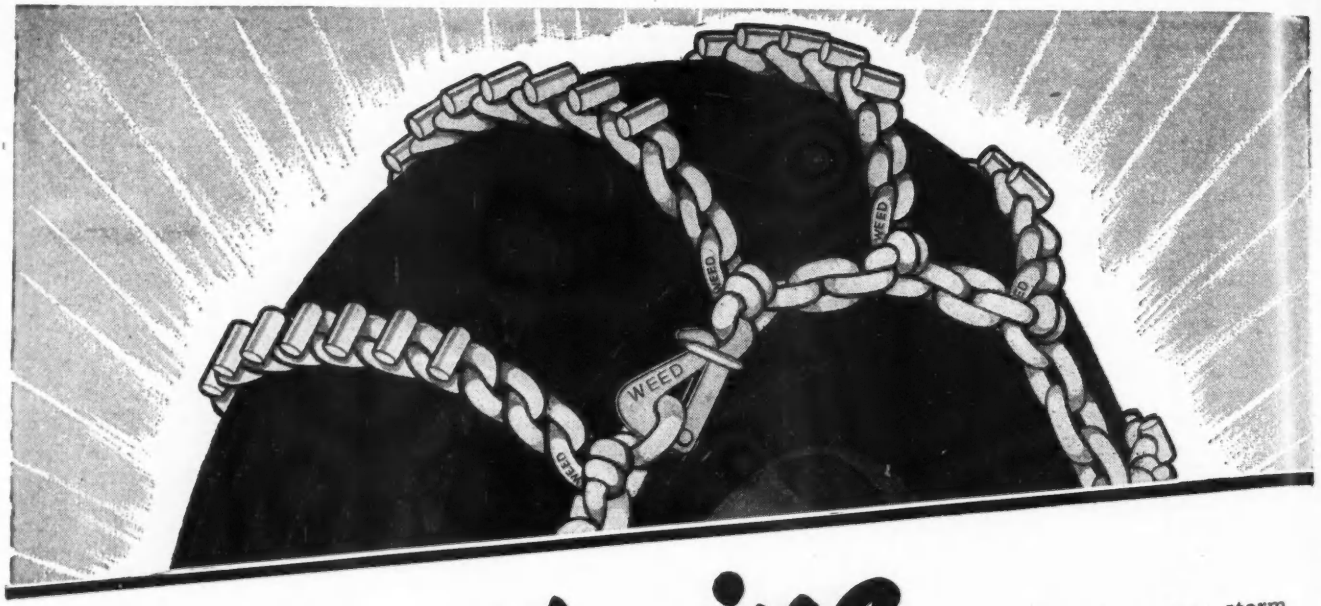
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For uniform performance, such vital automotive assemblies as clutch and radiator require rigid controls in production. Plant capacity is important . . . manufacturing experience, too.

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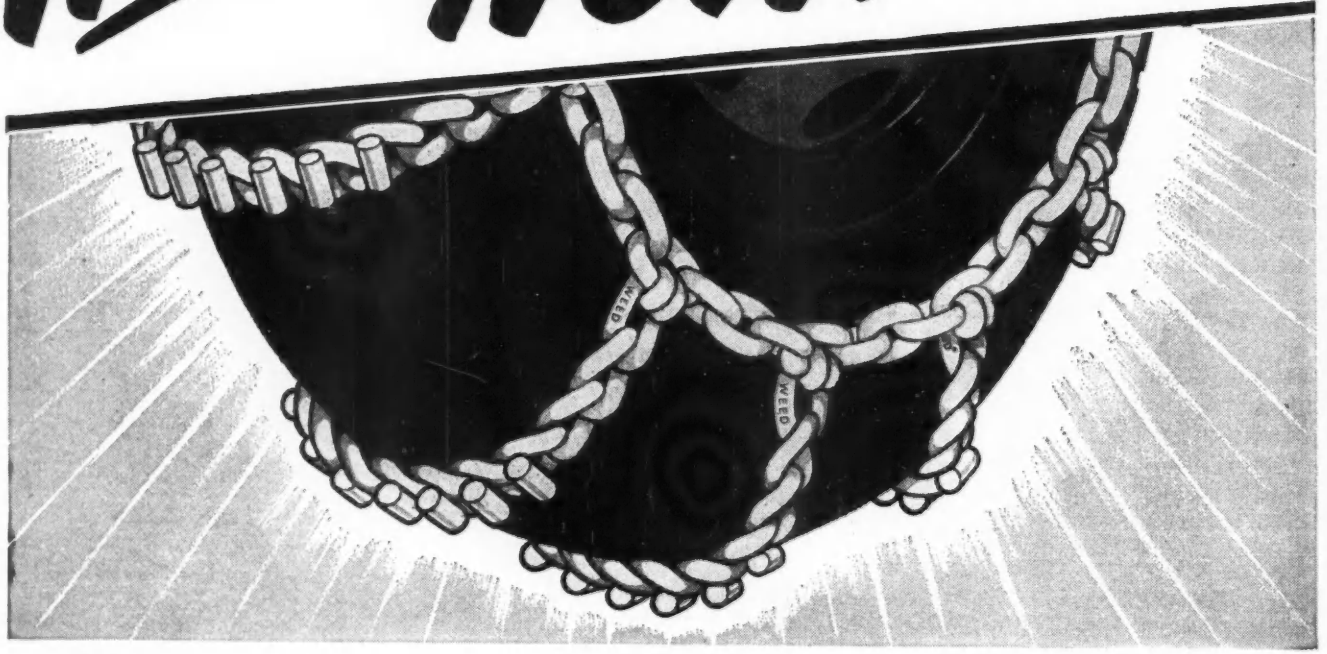
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• The first snow storm next fall may put your schedule on the skids unless you have your Weed Chains ready. It costs no more to be prepared for the first storm than for the second, third and fourth. So order now. And for the best buy in tire chains specify Weed American Bar-Reinforced. More than double the mileage of a non-reinforced chain.



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In Business for Your Safety

Tops—for any cargo
Mt. Vernon Extra Duck

Mt. Vernon Extra duck is made to take the worst that wear and weather can offer —made to give you extra mileage in cargo protection.

Mt. Vernon Extra is spun and woven from top grades of cotton under rigid laboratory controls—to provide uniform quality, consistent strength and toughness—to insure you cargo covers that give the maximum in protection.

For cargo covers you can depend on, specify Mt. Vernon Extra duck.

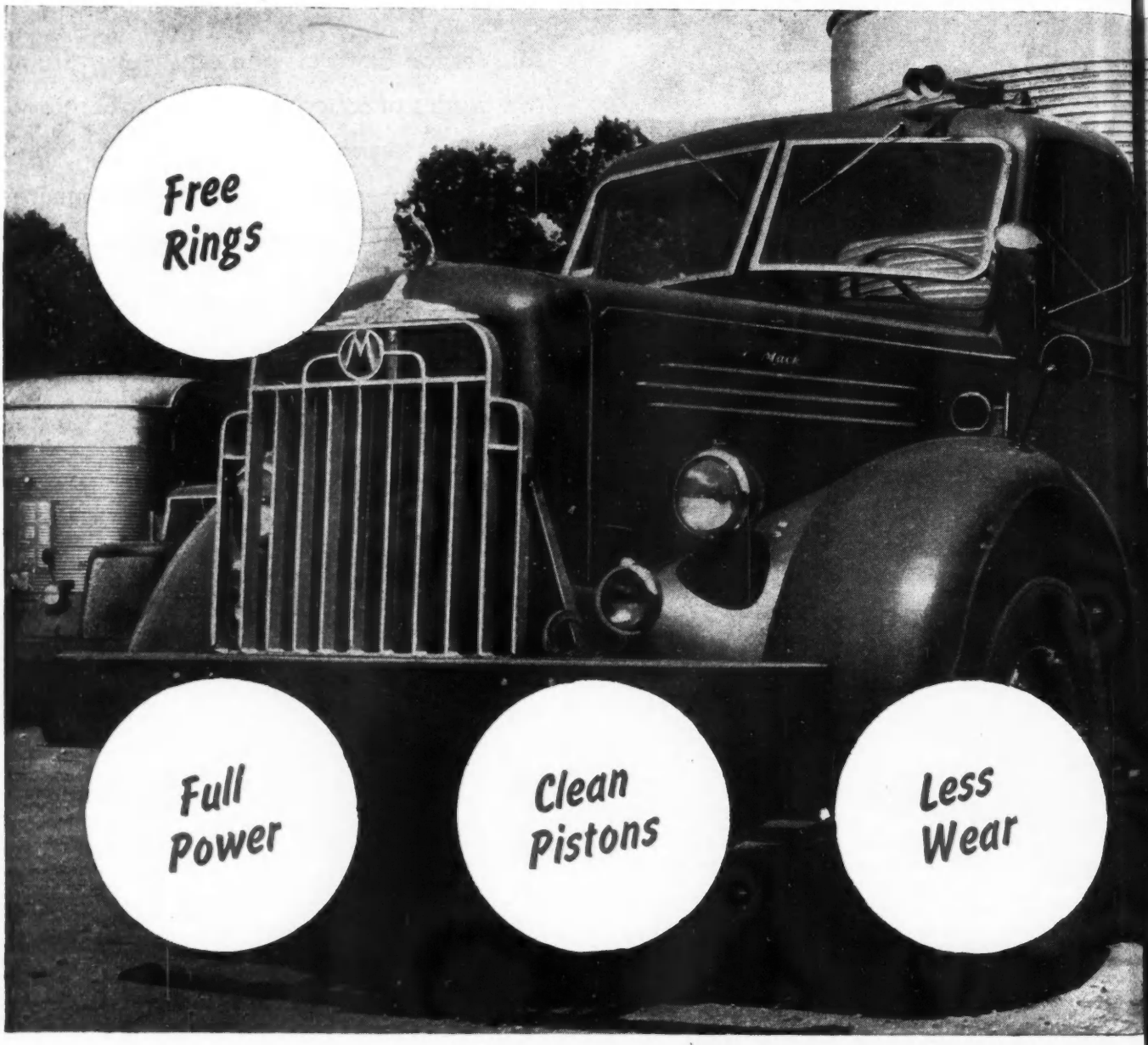


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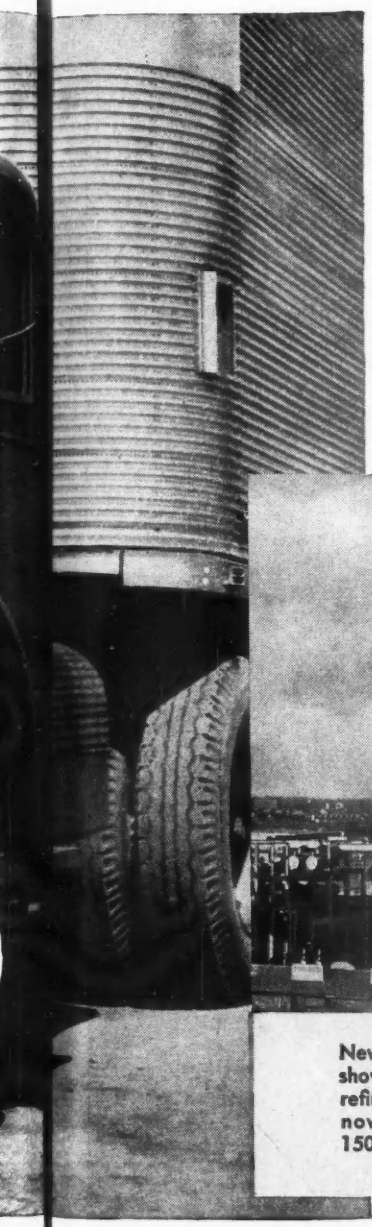
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YOUR NEAREST SUPPLIER OF SINCLAIR PRODUCTS WILL GLADLY ARRANGE

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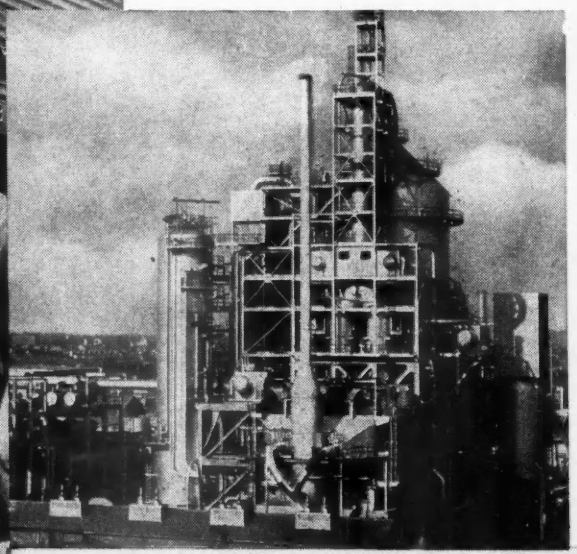


Two new Tenols now make it possible to meet every operating requirement with one of these superior oils. New—SUPER TENOL and TENOL EXTRA are designed to take care of new conditions and "heavier" duty service to which engines are being subjected.

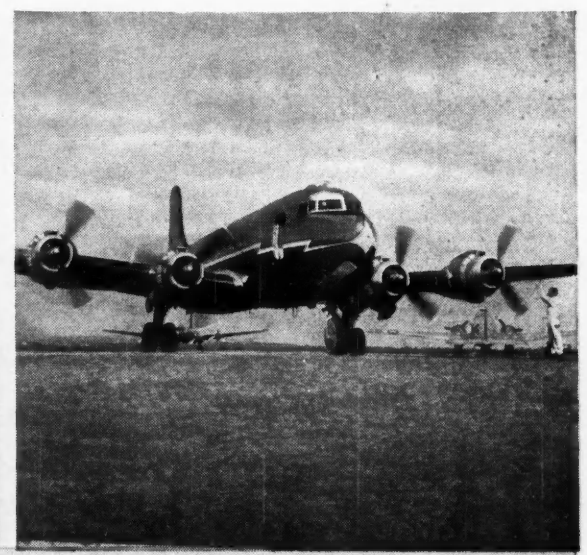
SUPER TENOL meets the engine test requirements of U.S. Army Spec. 2-104 B, Supplemental List 1. It accepts the challenge of continuous, *extra*-hard service and also thwarts cold engine sludge caused in diesels and gasoline engines by long idle and stop-and-go operation. It helps solve the problems caused by the use of improper or high sulphur fuels.

TENOL EXTRA qualifies under U.S. Army Spec. 2-104 B, Supplemental List 2 —and the requirements of Caterpillar Series 2 oil for supercharged diesels, abnormally heavy duty operation and high sulphur fuel.

Use TENOLS as maintenance tools to extend overhaul intervals, engine life.



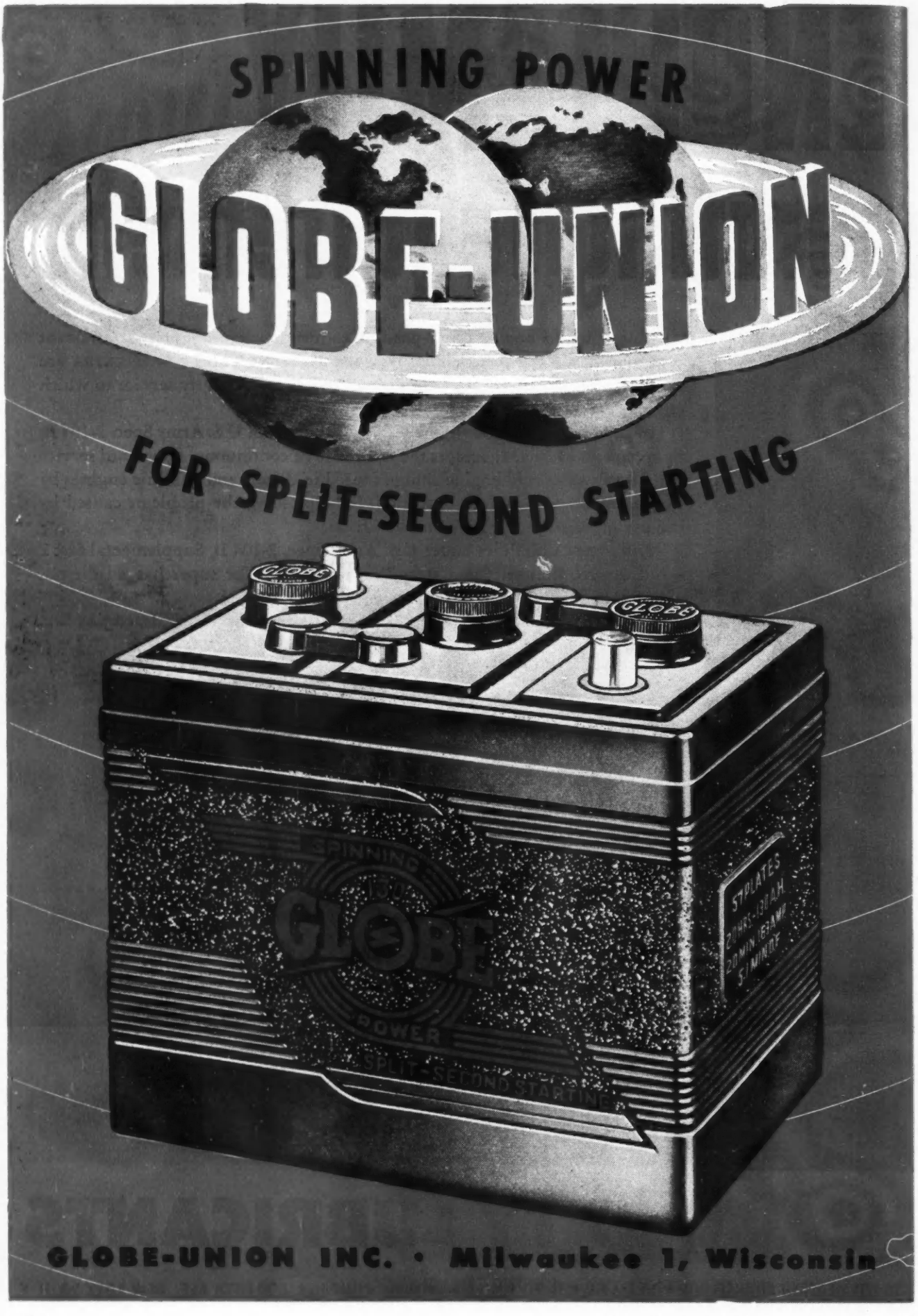
New Fluid Catalytic Cracking Stills (like the one shown here) are helping to expand Sinclair's refinery output. Sinclair's great refineries are now turning out products at the rate of 150,000,000 gallons of lubricating oil yearly.

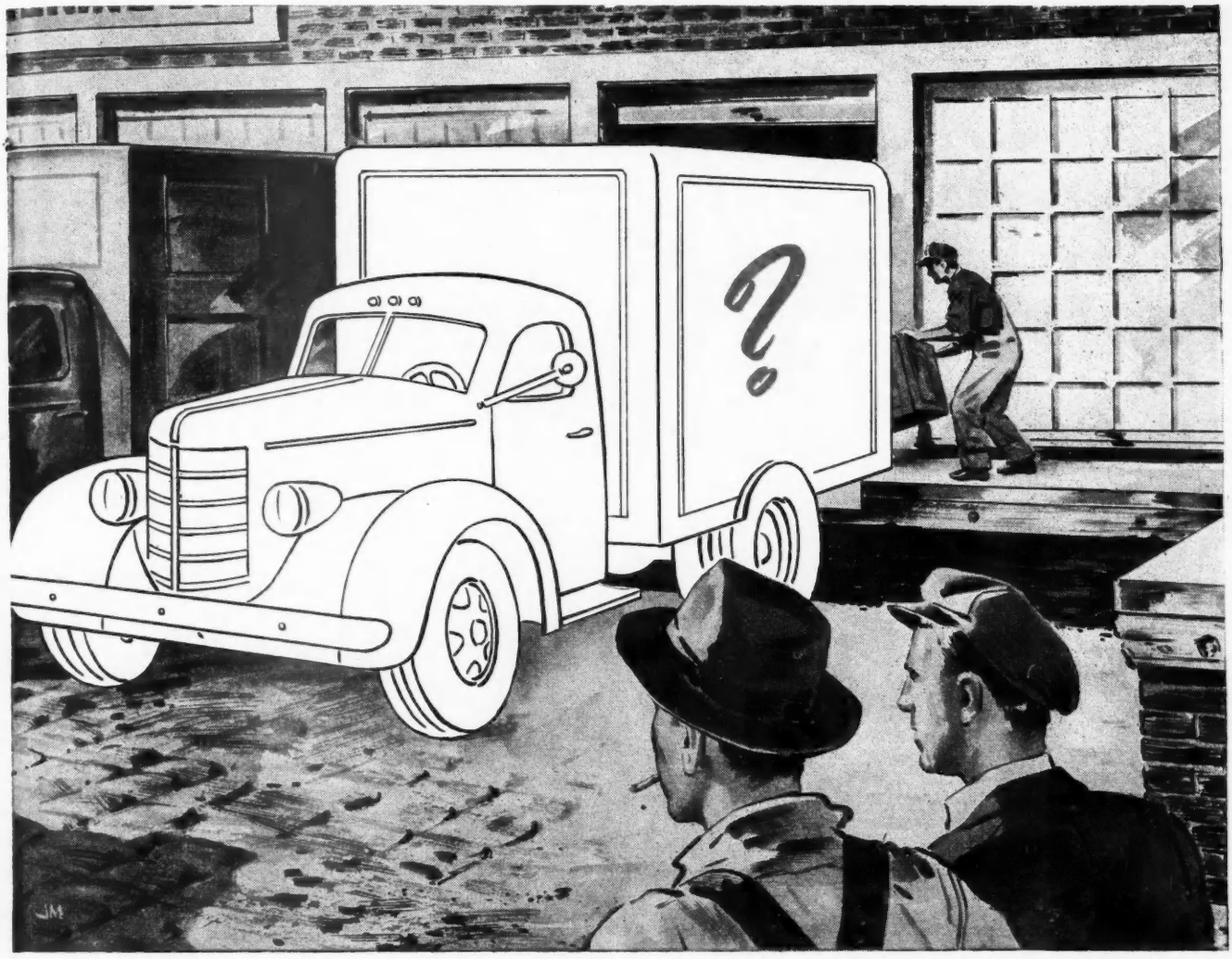


About 40% of all the Aircraft Engine Oil used by domestic Airlines in the U.S.A. is supplied by SINCLAIR. The same careful research that developed this high quality oil for the Airlines is put into TENOL and other Sinclair Oils.

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Your product may look good...but how about your trucks?

You take pride in your product's appearance. But are you careful enough about the appearance of your fleet? Shabby, neglected-looking trucks can injure your company's reputation by creating an unfavorable public impression. Keep your trucks looking bright and attractive . . . you'll be helping yourself to more customer goodwill.

Good-looking, hard-working fleets need finishes that are tough. That's why Du Pont DULUX Enamel figures in so many maintenance schedules today. Day in, day out . . . month after month . . . its initial full-gloss beauty *holds* despite stains, weathering, and hard knocks. The result: less paint-shop "down time" and lighter maintenance expenses. From start to finish . . . use Du Pont finishes. E. I. du Pont de Nemours & Co. (Inc.), Refinish Sales, Wilmington 98, Delaware.

FOR A COMPLETE JOB—Du Pont Preparakote, the primer that *fills*, is specially formulated to work with DULUX. It goes on easily, dries fast, and stays put! From start to *finish* . . . use Du Pont finishes.

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ENAMEL
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

FOR HIGHEST PERFORMANCE

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REPLACE WITH THE PISTON THAT'S "ENGINEER APPROVED"





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ORIGINAL EQUIPMENT IN AMERICA'S FINEST MOTORS

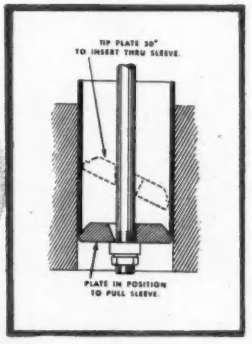
HEAVY DUTY PISTON EQUIPMENT

ZOLLNER MACHINE WORKS FORT WAYNE, INDIANA



Easy does it....

Pull a set of sleeves in only 15 minutes!



IT'S NEW...

Hein-Werner Hydraulic Puller for Cylinder Sleeves saves hours of time!

This small portable puller can be moved about and positioned with ease, and can be used without removing engine block from chassis. Hazard of cracked blocks or fractured sleeves common to ordinary methods of driving sleeves in and out is eliminated. Standard model pulls and inserts sleeves up to 4¾" shoulder O. D., with pulling jaws for special size sleeves available.

MODEL HP-33
PAT. PENDING
USER NET PRICE $64.75 **COMPLETE**

and...NOTE THESE LOW PRICES ON THE FOLLOWING MODELS OF UNDER-AXLE JACKS



MODEL	CAPACITY	FORMER PRICE (DEALER)	NEW PRICE (DEALER)
E1.7F	1½ Tons	$ 6.95	$ 5.65
E3.9A	3 Tons	12.10	10.65
E5.9A	5 Tons	14.25	12.80
E8.9A	8 Tons	16.55	14.65
E12.9A	12 Tons	22.65	19.25
20.10AA	20 Tons	36.80	32.50

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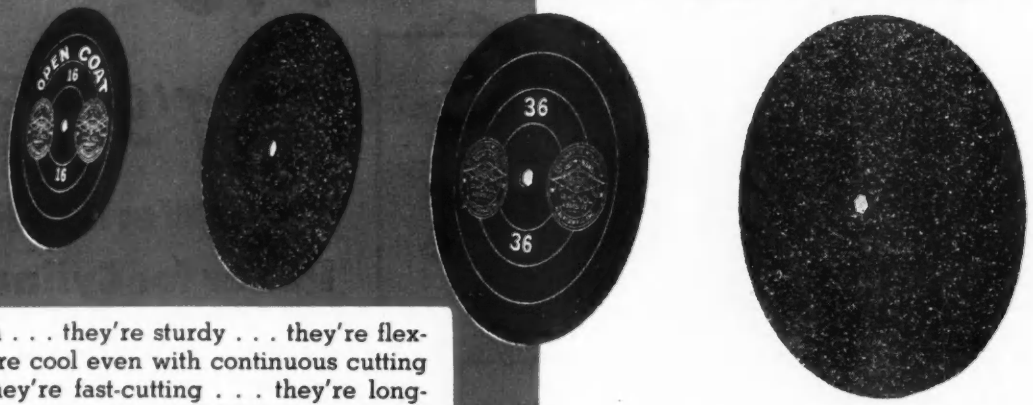
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AMAZING RESULTS

on the Toughest Sanding Jobs with this *Dependable* Combination

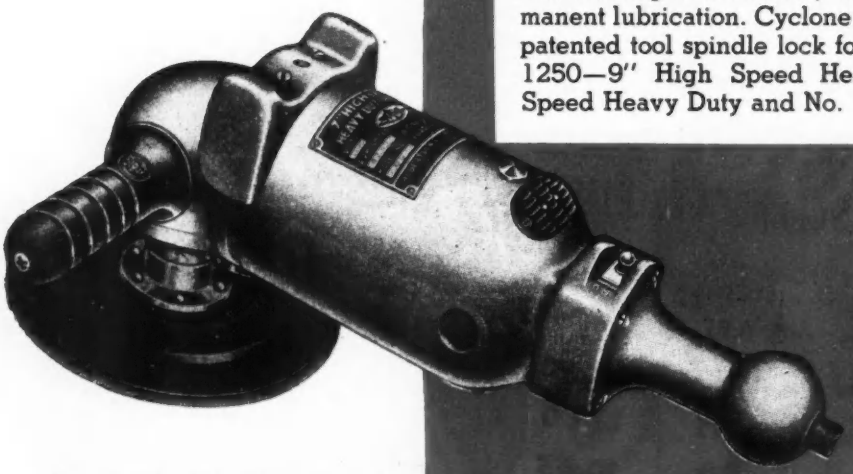
SIOUX "RESIN BOND" Abrasive Discs



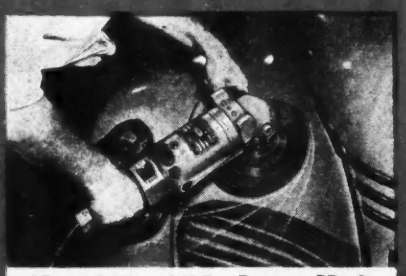
They're tough . . . they're sturdy . . . they're flexible . . . they're cool even with continuous cutting action . . . they're fast-cutting . . . they're long-lasting . . . they're amazingly flexible for concave, convex and reverse curve sanding . . . they're everything you want in a sanding disc.

SIOUX High Speed Sanders . . .

Ball-bearing construction, heat treated alloy steel gears, permanent lubrication. Cyclone fan for increased ventilation and patented tool spindle lock for changing discs. 3 Models: No. 1250—9" High Speed Heavy Duty; No. 1267—7" High Speed Heavy Duty and No. 1265—7" Special.



No. 1267—7" High Speed and No. 1265—7" Special. Same design and specifications except load speed.



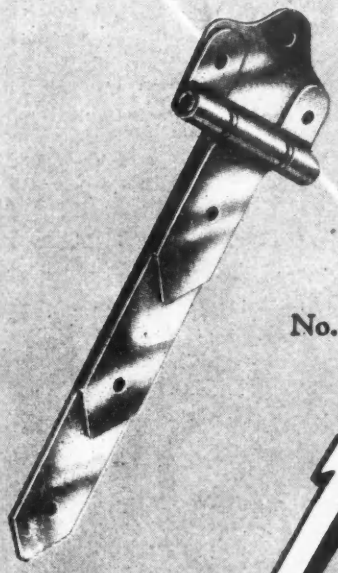
No. 1250—9" In Action High Speed—Heavy Duty.

Sold only through Authorized SIOUX Distributors

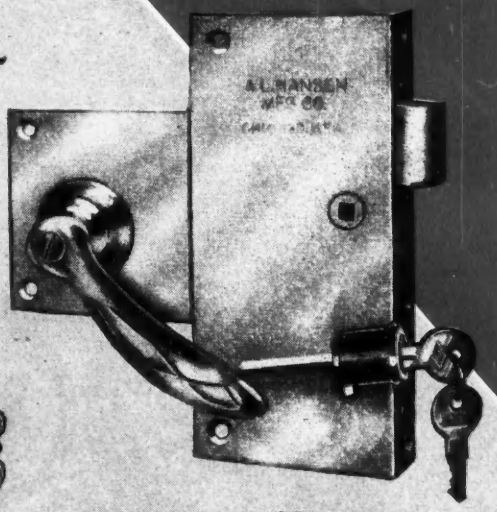
STANDARD THE WORLD OVER

ALBERTSON & CO., INC. SIOUX CITY, IOWA, U. S. A.

Where Money's at Stake-Protect Your Investment with Hardware that's Strong Dependable- Durable- Safe!



No. 12



No. 60-6L

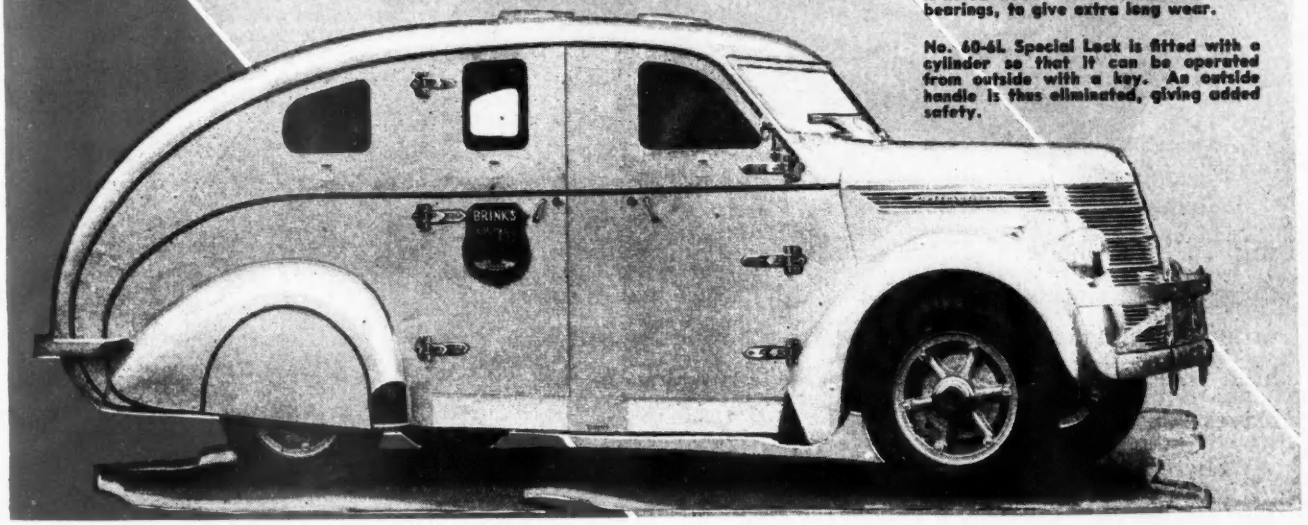
HANSEN
HARDWARE *for* Commercial Bodies

Hansen

Armored car for Brinks Express protects its fabulous cargoes of money with the Hansen 60-6L Special Lock, and the Hansen No. 12 Leaf-Type Hinge.

No. 12 Leaf-type Hinge is constructed of three-ply hard-rolled steel. Hinge is fitted with two hardened steel thrust bearings, to give extra long wear.

No. 60-6L Special Lock is fitted with a cylinder so that it can be operated from outside with a key. An outside handle is thus eliminated, giving added safety.



HALF a million dollars is all in a day's work to the crew of this car. They operate a Brinks Express armored car. Their job is to transport large sums of money. They are well protected against attack, by armor plate, by bullet-proof windows, and by **strong locks and hinges.**

Not least for their protection are the locks and hinges. These items are standard Hansen equipment. They were chosen because they are unsurpassed for strength and compactness.

Brinks' selection of Hansen body hardware confirms the wisdom of multitudes of other Hansen customers. They know that the Hansen reputation for rugged, serviceable hardware has been earned from almost half a century of experience.

Choose Hansen body hardware for your own installations. A full line is available.

Write for information today.

A. L. HANSEN MFG. CO., 5047 Ravenswood Ave., CHICAGO 40, ILL.

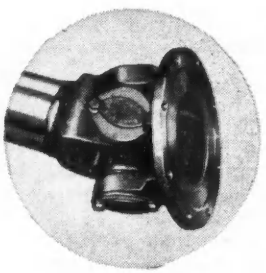
how to eliminate vibration at high speeds



USE
BLOOD BROTHERS
UNIVERSAL JOINTS
Statically and Dynamically Balanced
for Modern Truck Speed

Careful design . . . skilled workmanship . . . and modern science's most modern testing machines . . . these are the methods by which Blood Brothers makes sure its truck propeller shaft customers are free from vibration troubles. Every high speed joint is statically and dynamically balanced before it leaves the factory.

There's a Blood Brothers Universal Joint to meet your every need for flexible power. Write for engineering data and full information on the modern Blood Brothers production facilities.



Typical N Series
Universal Joint

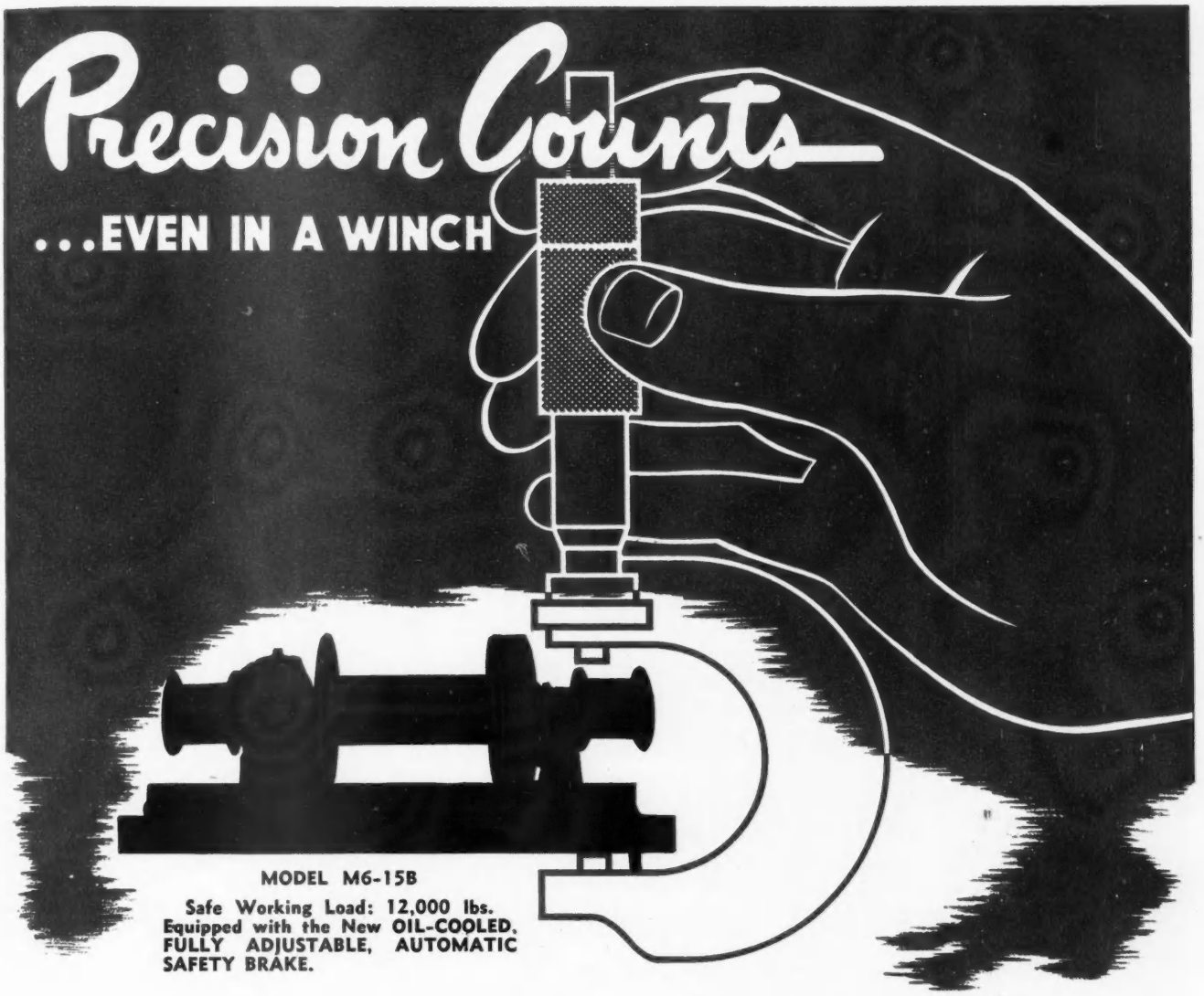
UNIVERSAL JOINTS

BLOOD BROTHERS MACHINE CO.

Allegan, Michigan
Chicago Office: 122 So. Michigan Ave.

DIVISION OF STANDARD STEEL SPRING CO.

Precision Counts
...EVEN IN A WINCH



MODEL M6-15B
Safe Working Load: 12,000 lbs.
Equipped with the New OIL-COOLED, FULLY ADJUSTABLE, AUTOMATIC SAFETY BRAKE.

Winches aren't made with the precision workmanship of a fine watch. That's to be expected, as tolerances of one ten-thousandth of an inch aren't necessary to make a winch perform perfectly. However, the more care given to the machining of moving parts, the better a winch will perform, year in and year out.

Every part of a BRADEN Winch is scientifically engineered to exact specifications. BRADEN engineers know, through years of experience, the closest tolerances, the correct machining of parts, and the proper metals to use in manufacturing a winch that will perform to perfection under the most grueling conditions. Yes, precision manufacturing counts in a BRADEN Winch. Performance on the job proves that the extra effort taken by BRADEN in manufacturing a precision engineered winch, is worth the effort in customer satisfaction.

BUY BRADEN — They Are Safer

BRADEN WINCH COMPANY — **TULSA 3,**
1001 East Admiral Boulevard — Oklahoma

BRADEN Winches

The Squirt that Washes Dirt

...installed in a matter of minutes

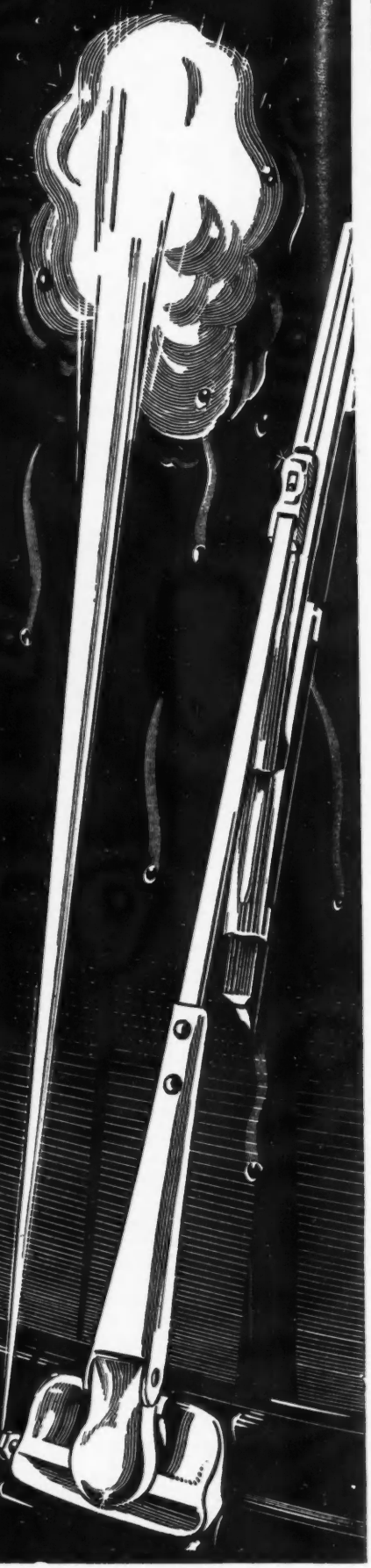
● It's a quick, simple job to install a Trico Windshield Washer.

Drivers use it countless times to keep the view ahead in sharp focus...to wash off eye-straining dust and grime.

But the man behind the wheel thanks it most when muddy road mist or tire splash keeps blotting out all vision. The touch of a button automatically clears the 'shield.

Important? More than *four million* drivers say so!

(Trico Rainbow Blade shown)



$6.25 AND UP
PLUS INSTALLATION



Most phone books list Trico installation service stations

The famous "Two Little Squirts"

TRICO

Windshield Washers

FULLY AUTOMATIC...NOTHING TO PUMP

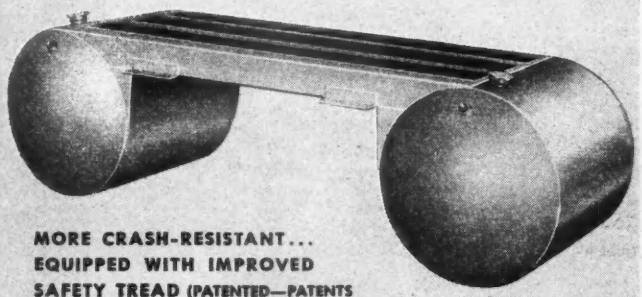
Trico Products Corporation, Buffalo 3, N. Y.

NEW...BETTER...PROVED...THE FIRST MAJOR IMPROVEMENT IN SADDLE TANKS IN 10 YEARS

NEW TRULY SAFE SADDLE TANK

"Cylsad"

TRADE-MARK



MORE CRASH-RESISTANT... EQUIPPED WITH IMPROVED SAFETY TREAD (PATENTED—PATENTS PENDING)

CYLINDER TANK SAFETY PLUS SADDLE TANK ADVANTAGES

In this attractive, clean-cut unit, known as Cylsad, two cylinder tanks are snugly supported and ingeniously braced into a smooth, low, flat saddle structure, topped with an abrasive tread deck, equally effective wet or dry. The complete assembly is many times stronger than two cylinder tanks with side mounting or angle and strap supports, yet gives full gallonage capacity within relatively small dimensions. All these advantages —at a competitive price. Capacities 105, 125, 150 and 180 gallons.

Also offered in novel saddle-tool box combination with built-in tool box easily accessible. All tanks tested with the G. E. electronic leak detector.

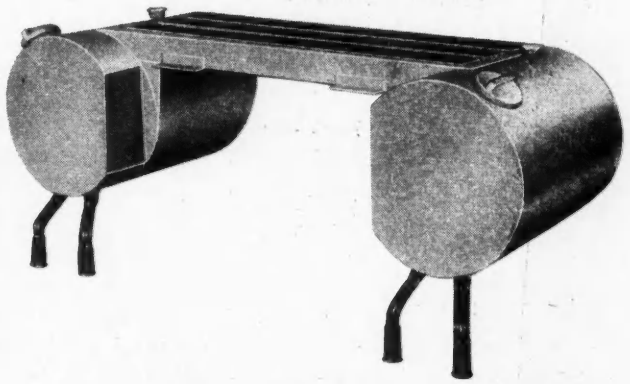
AS DEPENDABLE AS YOUR BRAKES

"Cylsan"

TRADE-MARK

TANK-SANDER COMBINATION

(PATENTS PENDING)



AVAILABLE WITH EITHER AIR or VACUUM OPERATED SANDERS

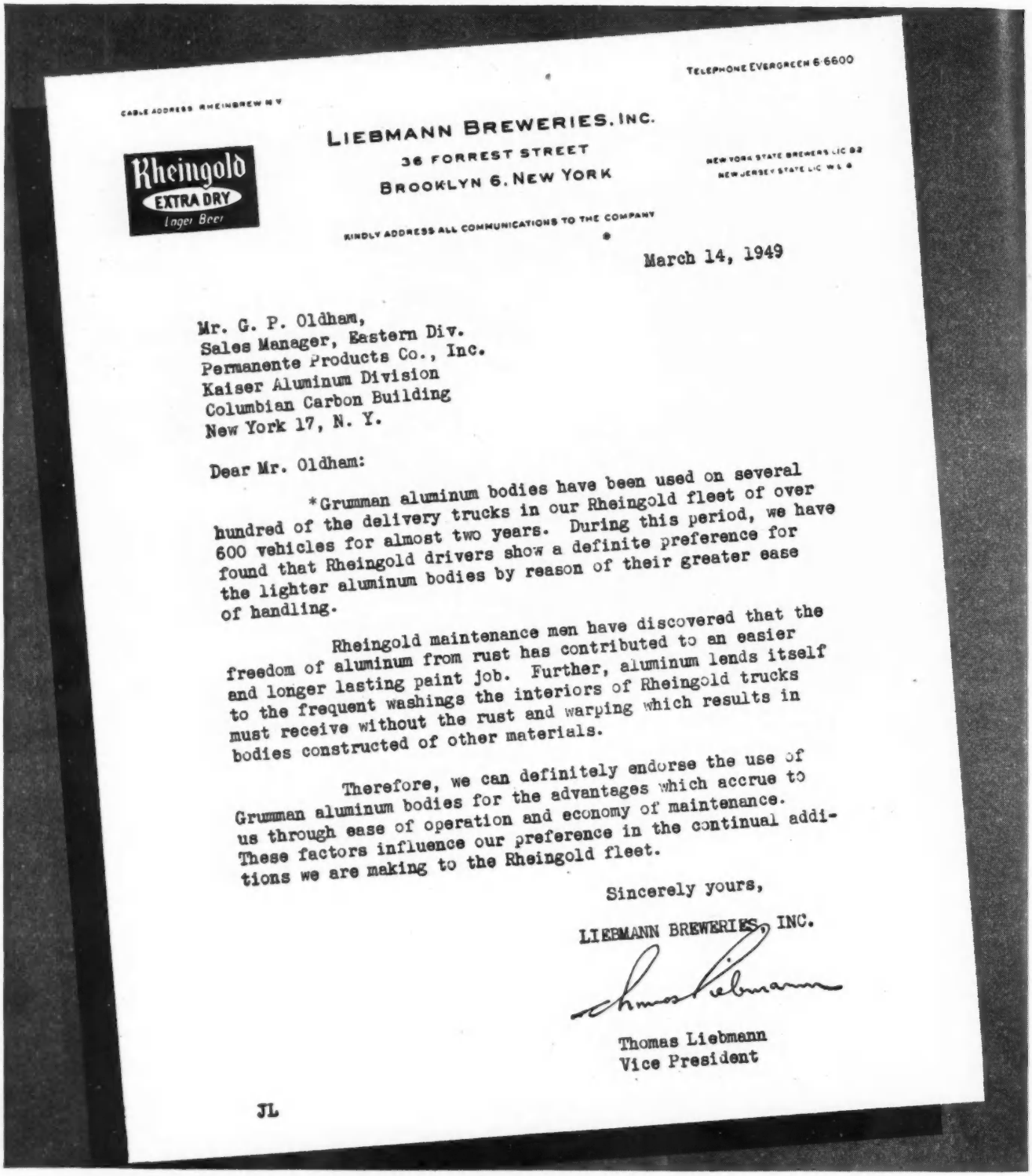
Known as Cylsan, this saddle unit is built like the Cylsad and has all the advantages of cylinder tank construction. In addition, the sanders have been ingeniously combined with the tanks into one unit, resulting in lighter weight, easier handling, and lower price.

The tank has a total capacity of 125 gallons, with a saddle width of 26 inches to insure easy installation on any tractor. The Sander section includes two hoppers, each of 125 lbs. capacity.

SEND FOR FOLDERS—*Write today for descriptive folders and name of nearest distributor.*

THE LINTERN CORPORATION
58 LINCOLN AVENUE · BEREA, OHIO

MORE PROOF *aluminum bodies*



CABLE ADDRESS RHEINBREW N Y

TELEPHONE EVERGREEN 6-6600

Rheingold
EXTRA DRY
Lager Beer

LIEBMANN BREWERIES, INC.
36 FORREST STREET
BROOKLYN 6, NEW YORK

NEW YORK STATE BREWERS LIC B-2
NEW JERSEY STATE LIC W L 6

KINDLY ADDRESS ALL COMMUNICATIONS TO THE COMPANY

March 14, 1949

Mr. G. P. Oldham,
Sales Manager, Eastern Div.
Permanente Products Co., Inc.
Kaiser Aluminum Division
Columbian Carbon Building
New York 17, N. Y.

Dear Mr. Oldham:

*Grumman aluminum bodies have been used on several hundred of the delivery trucks in our Rheingold fleet of over 600 vehicles for almost two years. During this period, we have found that Rheingold drivers show a definite preference for the lighter aluminum bodies by reason of their greater ease of handling.

Rheingold maintenance men have discovered that the freedom of aluminum from rust has contributed to an easier and longer lasting paint job. Further, aluminum lends itself to the frequent washings the interiors of Rheingold trucks must receive without the rust and warping which results in bodies constructed of other materials.

Therefore, we can definitely endorse the use of Grumman aluminum bodies for the advantages which accrue to us through ease of operation and economy of maintenance. These factors influence our preference in the continual additions we are making to the Rheingold fleet.

Sincerely yours,

LIEBMANN BREWERIES, INC.

Thomas Liebmann

Thomas Liebmann
Vice President

JL

***GRUMMAN AIRCRAFT** Engineering Corp., major builder of aluminum truck bodies, is a consistent user of Kaiser Aluminum.

cut costs, increase efficiency!



THESE Rheingold truck bodies are manufactured for the J. B. E. Olson Corp. by Aerobilt Bodies, Inc., a subsidiary of the Grumman Aircraft Engineering Corp.—a consistent user of Kaiser Aluminum. These units not only assure lower costs and great operating efficiency, but allow a substantial initial saving in chassis costs.

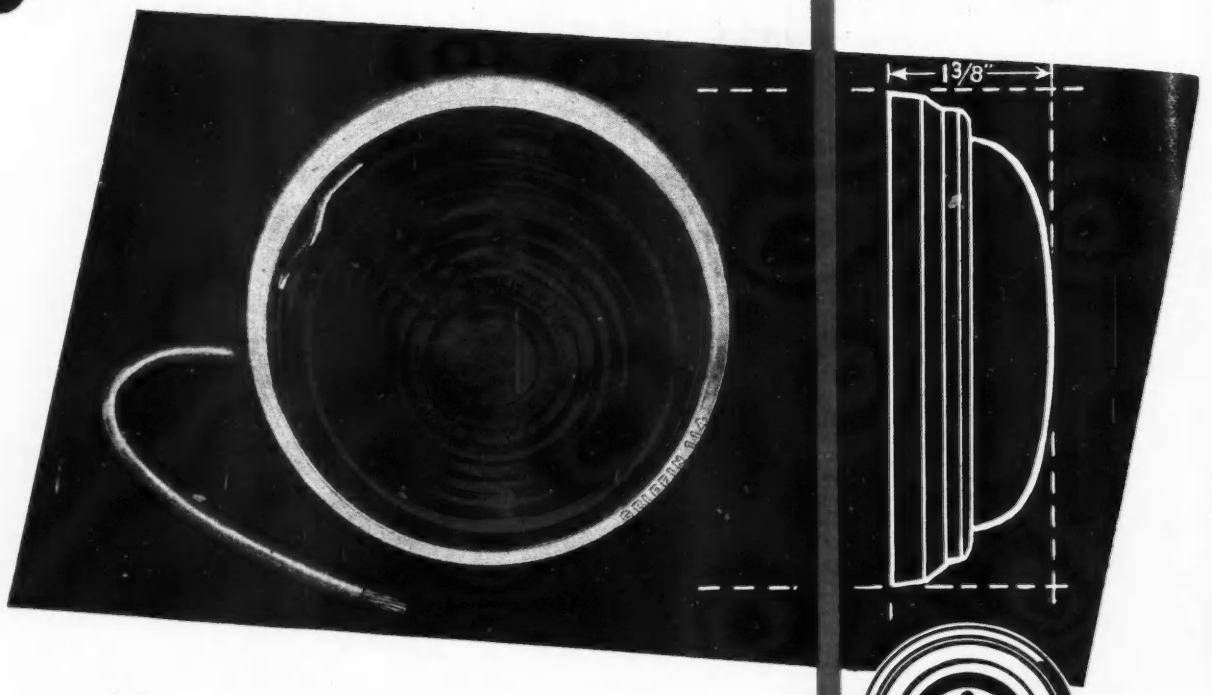
Permanente Metals

PRODUCER OF

Kaiser Aluminum

SOLD BY PERMANENTE PRODUCTS COMPANY, KAISER BUILDING, OAKLAND 12, CALIF. . . . SALES OFFICES IN:
Atlanta • Boston • Chicago • Cincinnati • Cleveland • Dallas • Denver • Detroit • Houston • Indianapolis • Kansas City • Los Angeles
Milwaukee • Minneapolis • New York • Oakland • Philadelphia • Portland, Ore. • Seattle • Spokane • St. Louis • Wichita
EXPORT OFFICE, OAKLAND, CALIFORNIA • WAREHOUSE DISTRIBUTORS IN PRINCIPAL CITIES

Slim...Trim...and Terrific





Model No. 114. Flat surface mounting. One-piece cast non-ferrous metal body. Diameter, 3¾", depth, 1⅜". Takes either 6 or 12 volt bulb. Chromium Plate or Aluminum Vehicle finish. Amber, Crystal, Green or Red lens.

NEW GRIFFIN CLEARANCE-MARKER LAMP FITS INSIDE RUB-RAIL

This unique new Griffin Lamp is so flat it hugs inside the rub-rail, completely protected from blows, bumps, side-scrapes. And it's protected from all corrosion—it can't rust, even on cattle trucks.

The body is just one piece with molded-in connector socket—and outlives all competitive makes. The beacon-type lens has terrific visibility, from back and front and side.

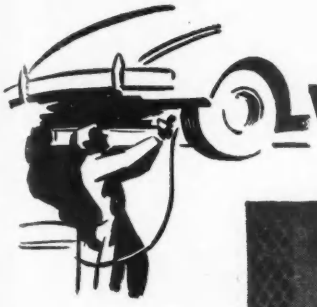
Fleet owners and body builders everywhere are adopting the Model 114 on sight, proving it in use. They're finding, for example, this lamp is easier to install and service, with no connector hole drilling required.

The rubber mounting gasket and improved insulation are typical of Griffin's *built-in XX safety factors*—engineering improvements developed for the fleets. You'll find these safety factors in a complete line of stop-and-rear lamps, clearance-and-marker lamps, Reflex reflectors, rear vision mirrors. Your Griffin jobber has them all.

THE GRIFFIN LAMP COMPANY • HAMILTON, OHIO

WITH BUILT-IN XX SAFETY FACTORS

GRIFFIN
AUTOMOTIVE SAFETY LIGHTING



WAYNE LIFTS BUILD PROFITS

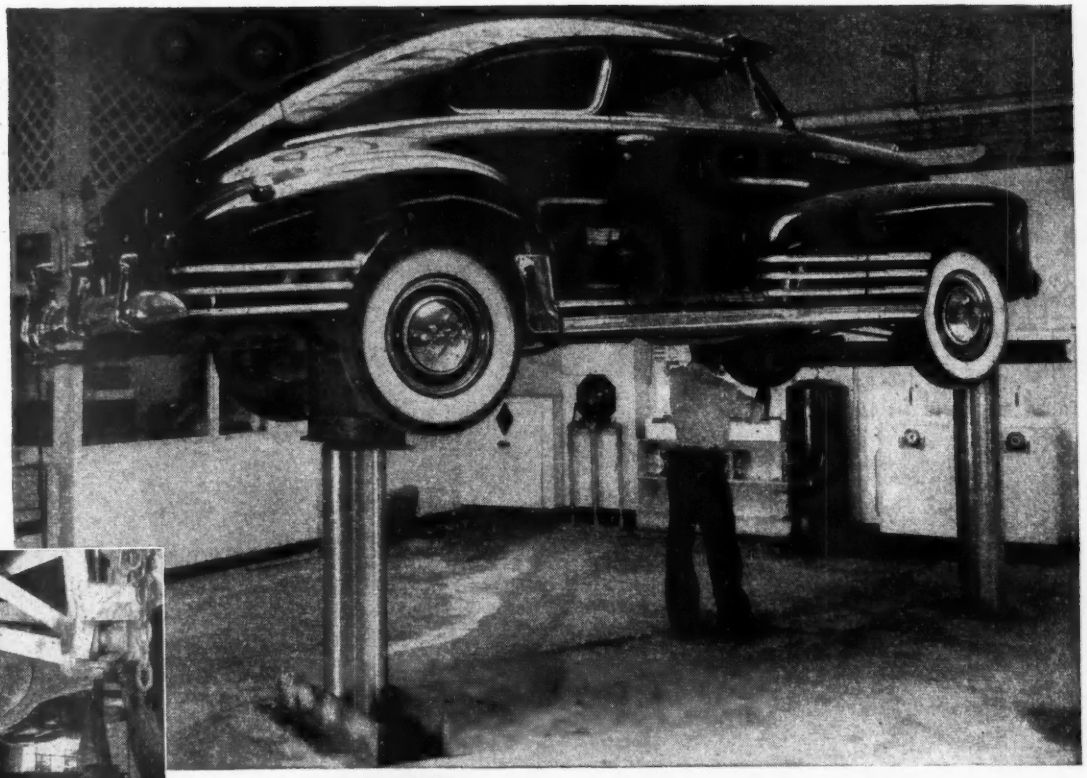
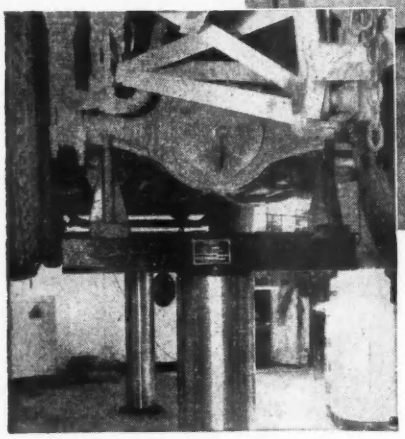


Illustration below shows special Jack design for Offset Differentials.



SINGLE OR MULTIPLE POST INSTALLATIONS

Wayne Hoists are tailored to your own requirements. A Wayne representative will discuss your needs with you, and Wayne Hoist Engineers will recommend the right equipment for you. There's no obligation.

Tailored TO FIT YOUR NEEDS

WAYNE AUTOMOTIVE HOISTS are powerful, easily handled, and convenient. They permit complete access to all under parts of car. Special multiple post arrangements and superstructure designs developed to suit your requirements and accommodate longest trucks. You can increase your lube business, simplify tire and repair work with Wayne Hoists.

Nationwide Service





THE WAYNE PUMP COMPANY
503 Tecumseh Street, Fort Wayne 4, Indiana

Please send ☐ Bulletin on Wayne ☐ Two Post, ☐ Single Post Hoists. ☐ Send Salesman.

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CITY _____ STATE _____

AIR COMPRESSORS • HOSE REELS • CAR WASHERS • DISPENSING PUMPS

Thompson ENGINE and CHASSIS Parts

The most complete line in the Replacement Field ....the Original Equipment Leaders

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REPAIRMEN SAVE TIME AND MONEY WITH THE ONE-STOP SERVICE their Thompson DISTRIBUTORS give them. You don't waste valuable time running around to several different places for parts. You avoid multiple orders, invoices, and payments—you save paper work and other red tape.

Thompson, as "Original Equipment leaders", supplies its jobbers with duplicate parts for all major points of heat, strain and wear in engine and chassis.

Your TP Jobber carries these quality replacement parts for nearly every make of car, truck, bus and tractor.



CHASSIS PARTS

Independent Front Wheel Suspension Parts.
Shackles, ***Silent-U, Tryon***
Tie Rods, ***Dual-Bearing***
Bushings, ***Metal, Rubber***
Bolts, ***King, Spring and Tie Rod***

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Pistons: ***Alloy, Iron, Steel-Belted***
Piston Pins: ***Chromium-Plated***
Connecting Rods
Cylinder Sleeves: ***Wet and Dry Types***
Engine Bearings
Valves: ***Silcrome, Aero-type, Sodium-Cooled***
Valve Rotocaps
Valve Seat Inserts
Valve Guides
Valve Springs
Valve Retainers
Water Pumps: ***Packless & Factory-Type***
Water Pump Parts



THE ONE STOP STORE for ALL the PARTS you need!

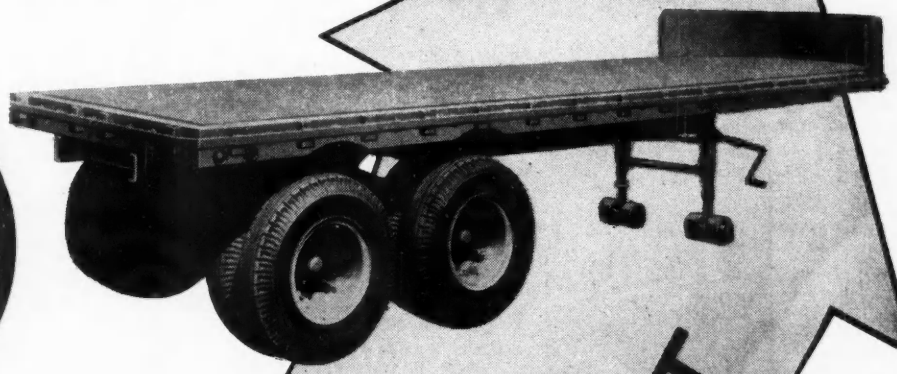
See Your Thompson Products *Jobber*

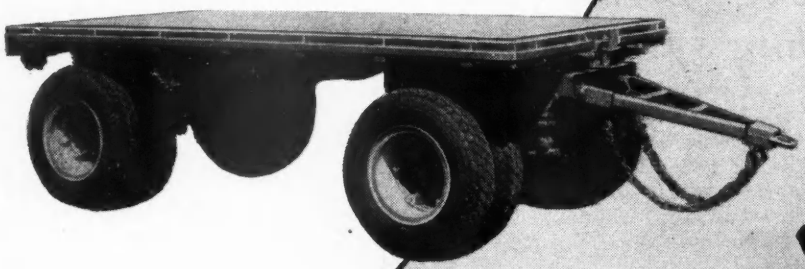
CLEVELAND • DETROIT • LOS ANGELES

WE'RE *SHARP* ON . . .

FLATS

..IN ALL SIZES







FROM THE SMALLEST TO THE LARGEST

Flat Bottom Trailers are *Kingham Specials.* Kustombilt in all sizes and capacities from short steel-hauls to long, cotton and tobacco trailers . . . . Straight and Drop Frame—Single Axle—4 Wheelers—Tandems.

OF COURSE WE KUSTOMBUILD VANS, RACKS, REEFERS AND FURNITURE VANS TOO.

A load behind is a trip ahead

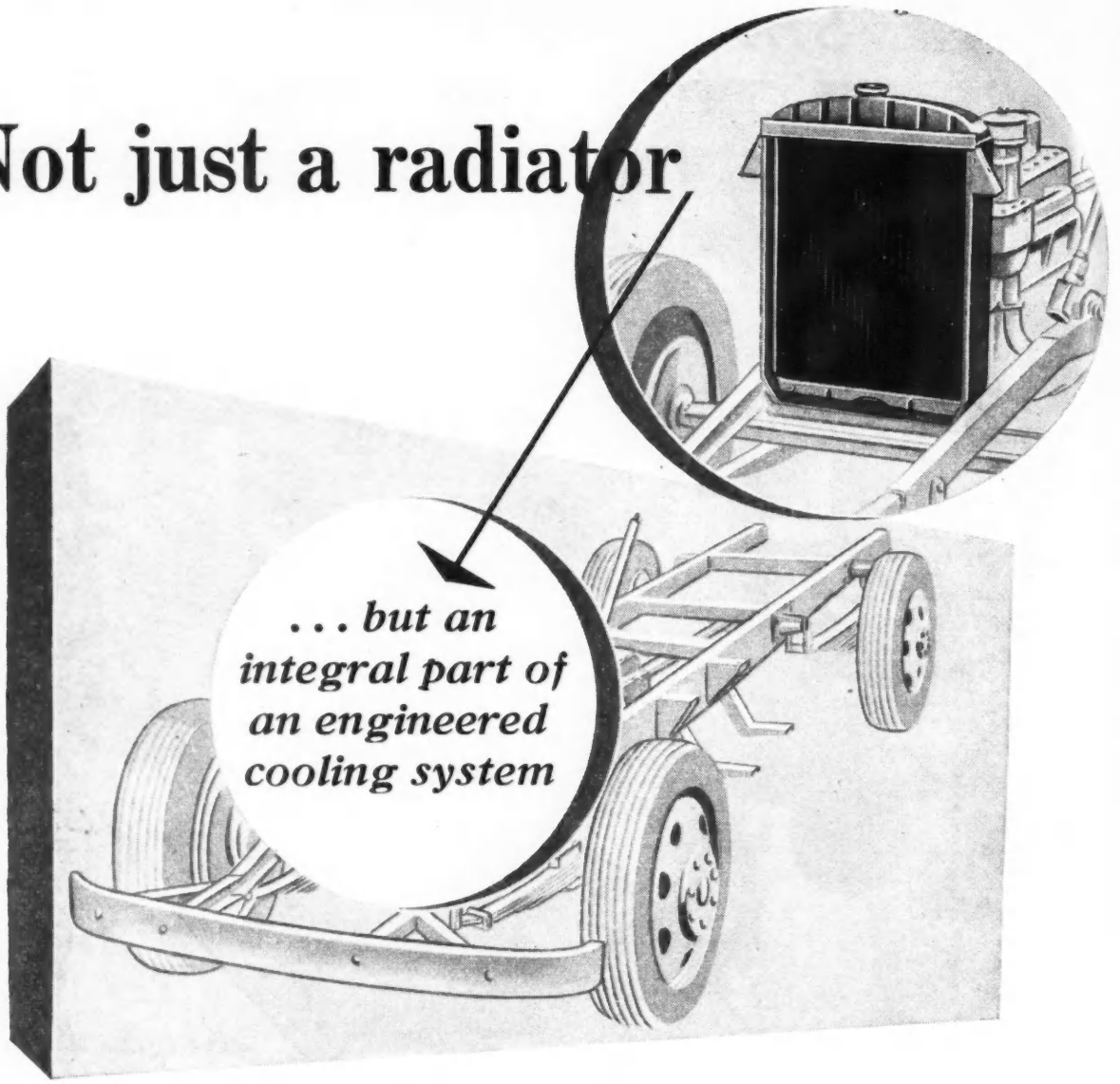
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NATIONAL SERVICE

KINGHAM TRAILER COMPANY, INCORPORATED **LOUISVILLE, KENTUCKY**

Not just a radiator



When a manufacturer of cars, trucks, buses or tractors consults Harrison on a cooling problem, some pretty important *cost savings* are likely to result.

Harrison tackles the *over-all cooling problem* . . . fan location, shrouding of the radiator core, restrictions to air movement, size of fittings, method of mounting and other factors. And Harrison's recommendations lead to an engineered cooling system that *saves* on core costs, *saves* on mounting costs, *saves* on parts costs.

Let Harrison's complete Testing Laboratories, extensive field experience and unmatched manufacturing facilities give you better cooling at lower cost. Harrison Radiator Division, General Motors Corporation, Lockport, N. Y.

HARRISON

RADIATORS, THERMOSTATS, HEATERS, DEFROSTERS, OIL COOLERS

Quaker State makes the finest quality lubricants in the correct weights for every lubrication need.

A policy of complete Quaker State lubrication is a longer-life insurance policy for all motor vehicles.

By using Quaker State Superfine Lubricants you provide the concentrated lubricating ability and wear-resistance which have built the reputation of Quaker State products for greater protection against wear and friction.



Quaker State Super Quadrolube



Quaker State Viscous Lubricant



Quaker State Wheel Bearing Lubricant

Quaker State Superfine Lubricants

You can buy no finer lubricants than Quaker State Superfine Lubricants anywhere at any price.



Quaker State Quadrolube



Quaker State Waterproof Lubricant



Quaker State Universal Joint Lubricant



Quaker State EXPP2 Lubricant



When we built Ausco Hydraulic Truck Jacks

...We Read Your Mind!

Here are some of the important things *you want* in your next jacks—things *you have in mind* insisting upon in the next jacks you buy.

You want **QUICK AND EASY PLACEMENT,**
so you can slide the jack under the axle without "juggling around". AUSCO's exclusive "self-aligning" base answers that specification!

You want **INSTANT-RESPONDING LIFTING ACTION,**
the kind that counts when you're running on a tight time schedule. AUSCO's exclusive "in-line" valve action takes care of that by raising the load simultaneously with the first stroke of the handle!

You want **A SOLID BASE,**
one you can depend on to hold the load steady and safe without slipping or skidding. AUSCO brings you a solid lifting foundation, made of leak-proof, non-porous alloy-steel, that is just what you had in mind!

You want **AMPLE LIFTING POWER.**
If the label says "capacity 3 tons", you expect that jack to lift your 3-ton truck "without a whimper"—without having to worry about overloading or damaging it. AUSCO Hydraulic Axle Jacks assure ample, dependable lifting power with such construction refinements as the "Instant-Flow" Safety Release, long-life piston cup and non-sticking ram cup.

Furthermore, the dependable AUSCO Guarantee stands squarely behind every AUSCO Jack you buy!

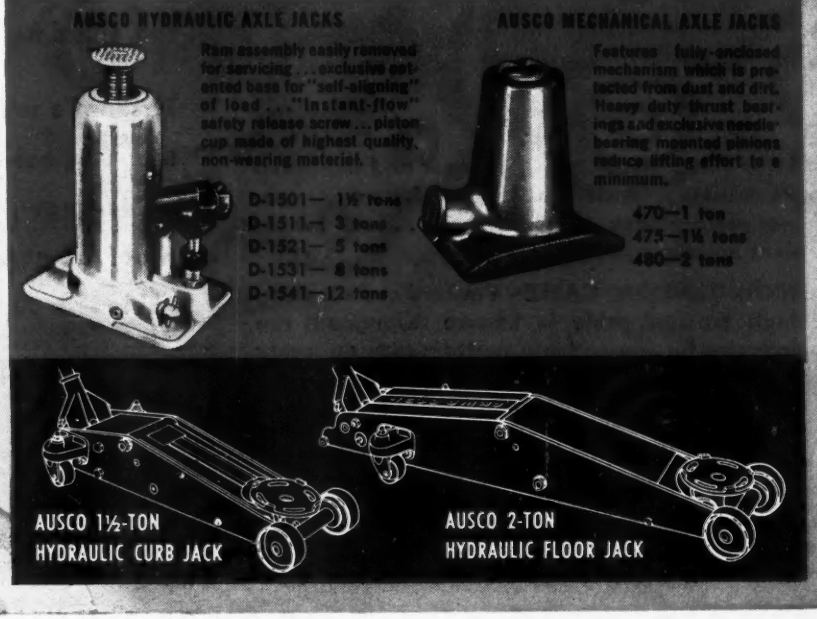
See these rugged "fleet-designed" jacks at your AUSCO Jobber's TODAY! Inspect them closely! Operate them! Note all their features!

...you'll think we READ YOUR MIND!

AUSCO Jacks

AUTO SPECIALTIES MFG. CO.
St. Joseph, Benton Harbor and Hartford, Michigan; Windsor, Ont., Canada

R-3409



PACKARD

AUTOMOTIVE CABLE

FOR ALL YOUR WIRING NEEDS!



The best recommendation Packard cable could have is the fact that it is used as original equipment on more cars, trucks and buses than any other make. Packard cable is the standard for the automotive industry.

Packard's unique position as the leader in the original-equipment and replacement fields—now, as for many years past—is proof of quality . . . proof that Packard cable is a superior product.

PACKARD CABLE—
Tops for Every Requirement

LOW TENSION CABLE—The new and improved Packard low tension cable gives definitely superior performance . . . is tougher . . . lasts longer—at no increase in price.

HIGH TENSION CABLE—Packard's Four-Forty high tension cable is known throughout the industry for dependable performance on every make and model vehicle in every type of service.

BATTERY CABLES—Packard full-size battery cables assure fast cranking and quick starts, together with long life. They are available with your choice of the LeadAlloy terminal or the leaded brass terminal.

Packard
REG. U.S. PAT. OFF.
TRADE MARK

Packard Electric Division, General Motors Corporation
Warren, Ohio

FOREMOST BUILDER OF AUTOMOTIVE AND AVIATION WIRING



WHY CHICAGO EXPRESS BOUGHT 50 NEW TRAILMOBILES

"New Trailmobile Tandems are lighter than many of our single axle units!"

. . . says Mr. H. D. Gorman, President, Chicago Express, Inc.



"We ordered fifty All-Aluminum Trailmobiles some time ago. I am greatly pleased to note the increased payload which we now can haul, plus the additional revenue. Also, these lightweight tandem trailers, lighter than many of our single-axle units, enable us to comply with the "Weight Law" restrictions of all the States traversed in our operations!"

H. D. Gorman

All-Aluminum Trailmobiles Show Nation's Haulers Way to Amazing New Savings! Truckers across the nation are switching to All-Aluminum Trailmobiles—and finding them stronger, better . . . lighter than any trailer ever made before! They're getting, in regular hauling operation, up to 3,000 pounds per trip in *bonus load!* Trailmobile has been load-tested over some of the country's gruelingest haul routes to show its top-rated strength—has proved by actual scale weight-tickets that every trip means extra payload . . . and extra profits! Investigate the remarkable opportunities with All-Aluminum Trailmobiles today!

COMPARE! *Check These Advantages:*

- Up to 3,000 Lbs. More Payload!
- New Lighter Weight!
- New Stronger Construction!
- Load-Tested in the Field!

Write Today

for Complete Information on Trailmobile All-Aluminum Trailers

THE TRAILMOBILE COMPANY

Cincinnati 9, Ohio • Berkeley 2, California

MAIL THIS COUPON NOW!

THE TRAILMOBILE CO.
31st and Robertson, Cincinnati 9, Ohio

I am very much interested in the new Trailmobile All-Aluminum Trailers. Please send me complete descriptive information.

*Name*_____

*Business Address*_____

*City*_____ *State*_____

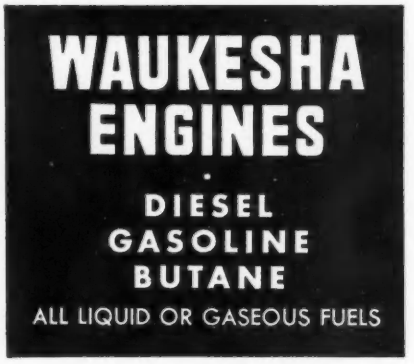
*My Position*_____











New Products

Continued from Page 152

P122. Truck Muffler

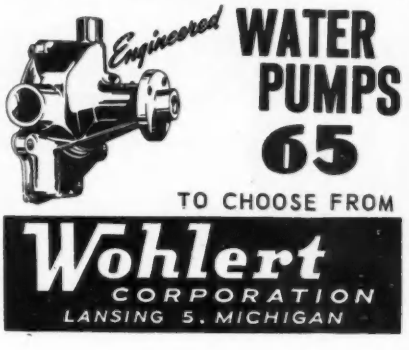
Straight-through construction, oversize inner tube and centered nipples at both ends are features of this heavy-duty HD-316 muffler for Chevrolet trucks. Made of aluminized rust-resistant steel, it operates at lower back pressure to assure maximum gasoline economy and minimize overheating, the manufacturer claims. A P Parts Corp., Toledo, Ohio.

P123. Electric Hone

A magnetic honing action principle guards against burning or grinding away of cutting surface during the sharpening process on this Synchro Electric Hone Sharpener with three interchangeable stones. Synchro Corp., Rochester, Mich.

(TURN TO PAGE 190, PLEASE)



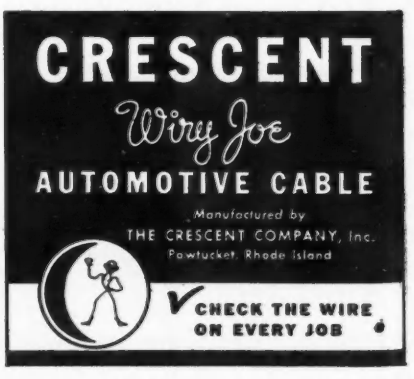




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McCORD GASKETS
MOST CAR AND TRUCK MAKERS DO
McCORD CORPORATION
Detroit, Michigan
Gaskets • Radiators • Mufflers
Pipes and Oil Retainers



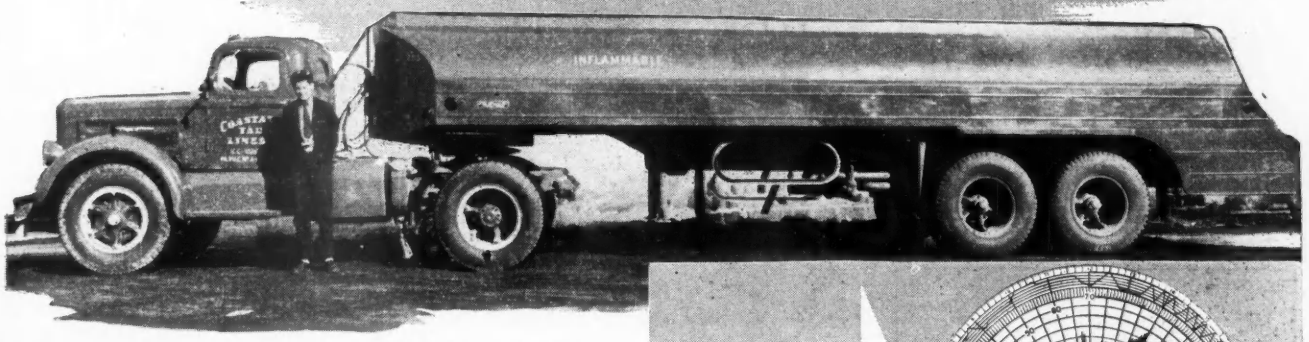




TACHOGRAPH

THE TIME-TESTED RECORDING SPEEDOMETER

Increases Driver Efficiency ... and Payload Profits*



Fewer accident claims . . . Lower insurance rates . . Less time in the repair shop—these are just a few of the benefits you get when you equip the vehicles in your fleet with Tachographs.

The Tachograph builds driver confidence and increases his efficiency. It gives a charted record of the entire trip and furnishes a graphic report of every movement, more accurate than a supervisor could give if he accompanied the vehicle.

These practical instruments have proved their value on thousands of transport vehicles. Manufactured by Sangamo Electric Company, they are fully guaranteed.

*Here's what a Safe Driver says . . .



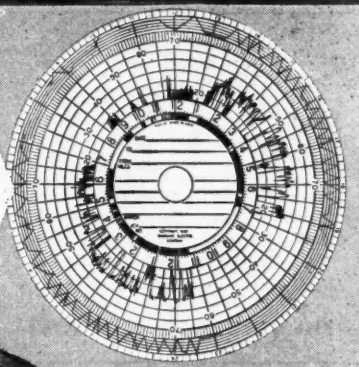
"The Tachograph has helped me to become more efficient in my work. Before we started using the Tachograph, being human I naturally fooled around on the road more than I do now—that is, I didn't have the same incentive to keep a schedule as I do now with a Tachograph chart of the trip. Now I don't put in as much time and still make my week's work.

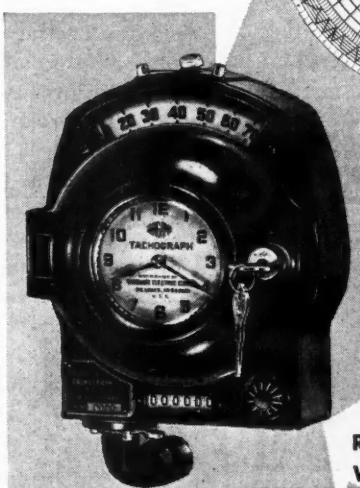
"The Tachograph chart also helps me make out my daily I. C. C. log more accurately from my trip record.

"Since we started using the Tachograph I can tell just how long I will be on each trip I pull without breaking any speed limits, and I know I will have a chart record to show where time was lost if I don't keep my schedule."

Sanders L. Carey,
Coastal Tank Lines

CHART RECORDS ALL MOVEMENTS





- WHEN ENGINE STARTED
- HOW LONG ENGINE IDLED
- WHEN VEHICLE WAS IN MOTION
- HOW FAST IT TRAVELED
- WHEN VEHICLE STOPPED
- DISTANCE TRAVELED BETWEEN STOPS

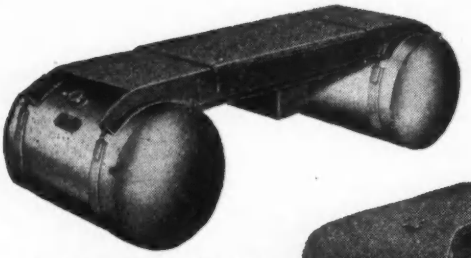
RED LIGHT WARNING
WHEN SET SPEED IS EXCEEDED

DISTRIBUTED BY
Wagner Electric Corporation

S49-5

Wagner Electric Corporation
6476 PLYMOUTH AVE., ST. LOUIS 14, MO.
Please send a copy of Bulletin SU-3B.

Name and Position_____
Company_____
Address_____
City_____ State_____
We operate_____ Vehicles
(NUMBER)



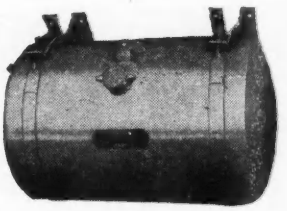
Snyder Safety Cylinder Tank and Tool Box Units use up wasted space by providing storage for tools, chains, power jacks, danger flags, etc. The jackwell is upright to prevent possible escape of jack fluid.

SNYDER SAFETY TANKS

A reflection of confidence in safety, dependability, and proven performance.



Snyder Safety Saddle Tanks occupy wasted space between the cab and fifth wheel. The top deck plate provides a safer means of crossing the chassis and carrying material, hose lines and spare tires. Fuel capacity of 75 to 150 gallons.



Cylinder Tanks are used where space is limited. They are constructed for standard or end fill. Capacity of 28 to 72 gallons.

For Catalog and Name of Your Nearest Dealer, Write:

SNYDER TANK CORPORATION

P. O. Box 14, Buffalo 5, New York — P. O. Box 2390, Birmingham 1, Ala.



KEEP DOWN COST-per-MILE with BEAR!

Increase tire mileage, cut accident costs! Make or get Bear Tests for Dy-Namic Wheel Balancing, use Bear Alinement, Straightening Equipment; the leaders do! BEAR MFG. CO., Dep't. C-3, Rock Island, Ill.

DEVILBISS

Spray-Painting Equipment • Spray Booths • Canopy Exhaust Systems • Exhaust Fans • Air Compressors • Hose and Hose Connections • Oil Guns

Distributors or factory sales and service representatives everywhere

THE DEVILBISS COMPANY
Toledo 1, Ohio

KINNEAR
STEEL ROLLING DOORS

For Truck Bodies and Buildings



Kinnear Rolling Doors save floor and wall space, open completely out of the way, and give extra protection. Built any size; motor or manual control. Write for details.

THE KINNEAR MFG. COMPANY
2100-20 Fields Ave. • Columbus 16, Ohio

INTERCHANGEABILITY PARTS LIST
for
EATON TWO SPEED AXLES
in

Brockway, Diamond T, Dodge, Ford, General Motors, and International Harvester trucks.

Easy-to-read cross-reference charts giving names and numbers for all parts of these axles. $5.00 per copy. Small postage charge on C.O.D. orders.

M & H PARTS INC.
14066 Euclid Ave. East Cleveland 12, Ohio

New Products

Continued from Page 188

P124. Electric Vacuum Unit Speeds Trailer Braking

A supplementary electrically-operated vacuum brake unit is now available for installation on vacuum brake systems to speed actuation of trailer brakes. The system, consisting of a pedal switch, load switch, vacuum reservoir, quick-acting vacuum valve and a third vacuum chamber, is said to assure lead braking on the trailer and to prevent jack knifing.

Regular vacuum brake equipment on the trailer remains intact. A third vacuum chamber is mounted on the trailer axle, and an electrically-operated quick-acting vacuum valve, installed on a small reservoir, is actuated by an over-running switch operated by the brake pedal.

An instrument panel switch is provided to control the lead brake system. with light load, heavy load and off positions. With this installation lag time is said to be cut to a minimum. The Kelsey-Hayes Wheel Co., Detroit, Mich.

END

(Please resume your reading on P. 65)

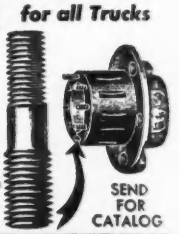


SNAP-ON TOOLS CORPORATION
8026-E 28th AVE. KENOSHA, WIS.

OVERSIZE
REAR WHEEL STUDS *for all Trucks*

Order from Your Jobber

CHAMP-ITEMS, Inc.
6191 Maple Ave.
St. Louis 14, Mo.



SEND FOR CATALOG



GATKE CORPORATION 248 N. La Salle Chicago 1, Ill.

For All Automotive Tool Needs—
The Smart Bet Is
NONE BETTER
Quality Hand Tools
For Every Job
NONE BETTER HAND TOOL DIVISION
THE NEW BRITAIN MACHINE CO.
NEW BRITAIN, CONN.

HEAVY DUTY
MOTOR TRUCKS
•
GASOLINE ELECTRIC
GENERATING SETS
DUPLEX
TRUCK COMPANY
LANSING, MICHIGAN



Top Performance in Heavy-Duty Service!

Gulflube Motor Oil H.D. will give you top performance and low maintenance costs in heavy-duty service.

Gulflube Motor Oil H.D. has a rich, full paraffin base that provides a particularly strong oil film and superior lubrication under the toughest operating conditions. It will help you get longer engine life.

Combined with its tough lubricating film is full detergency. In automotive Diesel engines this means that high-temperature sludge and piston varnish will be avoided or minimized. In extra heavy-duty gasoline engines, deposits and ring sticking of the type resulting from the oxidation of some lubricating oils will be avoided.

You'll get minimum oil consumption with Gulflube Motor Oil H.D. Rings stay clean and free, insuring better compression and proper oil control.

Gulf's patented antifoam agent prevents crankcase foam.

To find out more about Gulflube Motor Oil H.D.—the quality detergent oil with the rich paraffin base—contact your nearest Gulf Office.

Watch tire-mileage costs skid downhill

. . . when you equip with Gulf Heavy Service Tires. Two reasons why:

Weftless cord construction throughout—a greater usable strength factor from the first mile of service *and* during the critical break-in period.

Nylon breakers make recapping a safer investment for you. They absorb and smother bruising road shocks . . . protect the carcass cords against fatigue and breakage over unusually long periods of time.

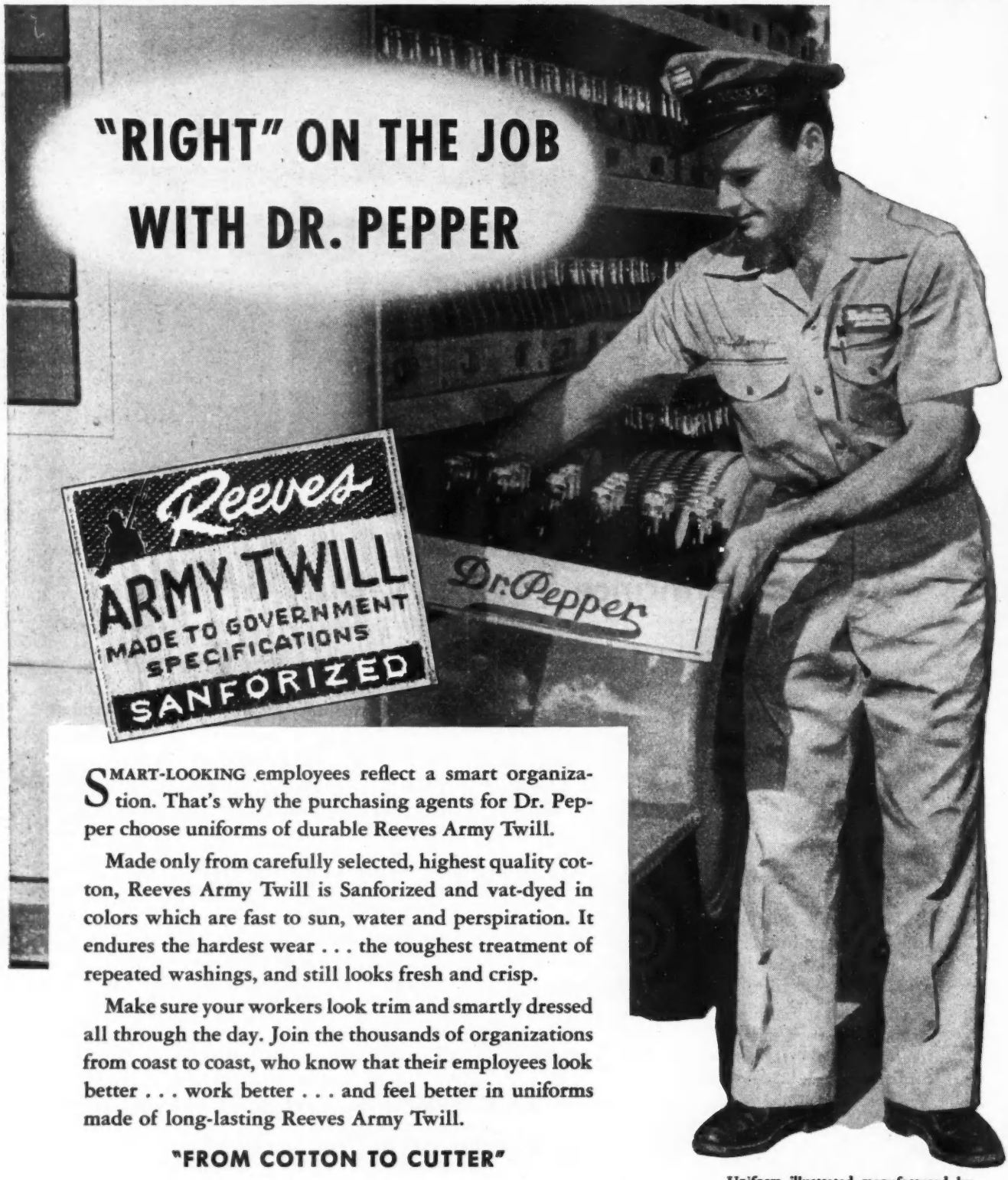
The full story of improved tire mileage and lower cost is yours in a free booklet—"Gulf Truck Tire Data Book"—on request to any of the offices listed below.

GULF

GULF OIL CORPORATION • GULF REFINING COMPANY

Boston • New York • Philadelphia • Pittsburgh • Atlanta
New Orleans • Houston • Louisville • Toledo

REEVES ARMY TWILL



SMART-LOOKING employees reflect a smart organization. That's why the purchasing agents for Dr. Pepper choose uniforms of durable Reeves Army Twill.

Made only from carefully selected, highest quality cotton, Reeves Army Twill is Sanforized and vat-dyed in colors which are fast to sun, water and perspiration. It endures the hardest wear . . . the toughest treatment of repeated washings, and still looks fresh and crisp.

Make sure your workers look trim and smartly dressed all through the day. Join the thousands of organizations from coast to coast, who know that their employees look better . . . work better . . . and feel better in uniforms made of long-lasting Reeves Army Twill.

"FROM COTTON TO CUTTER"

Uniform illustrated manufactured by T. S. Lankford & Sons, Abilene, Texas

REEVES BROTHERS, Inc. 54 WORTH STREET, NEW YORK 13, N. Y.

REPRESENTATIVES IN: *Akron • Atlanta • Boston • Chicago • Dallas • Los Angeles • Philadelphia • Portland, Oregon • St. Louis • Montreal • Toronto*



No. 113 OK

ONE OF *142 Quality Checks*

Why bother to make so many checks? Put yourself in our place. Would you want the L·O·F name to appear on any Safety Glass but the best? Neither would we. So we take particular pains.

Here's a typical example: in our check No. 113, after the glass has been completely edged, it moves on a conveyor through a specially lighted booth. Here an inspector catches every unit that may have fallen below the required high quality during preceding operations.

These 142 Quality Checks and Controls are important to you because they give L·O·F Safety Glass:

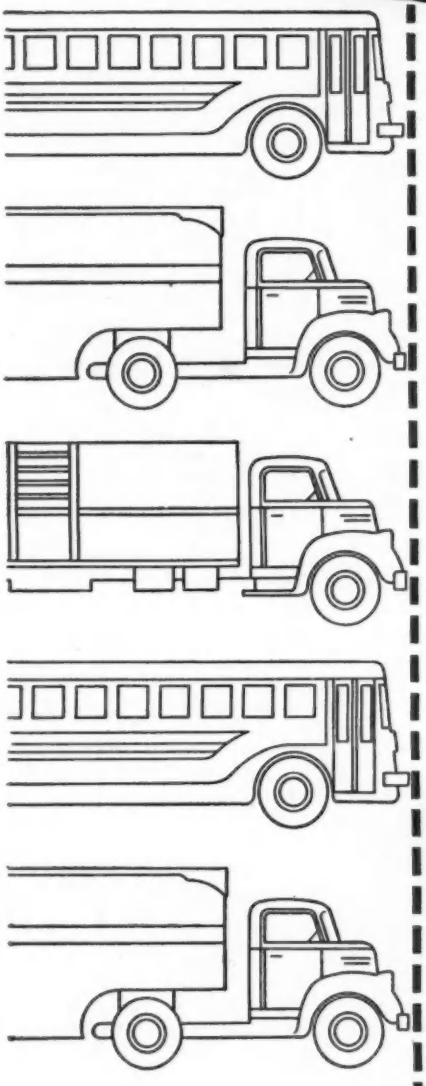
1. Better heat stability **2.** Better light stability
3. Better strength for safety **4.** Better adhesion, glass to plastic

That's why L·O·F Hi-Test is the best Safety Plate Glass you can get—anywhere. Libbey·Owens·Ford Glass Company, 5699 Nicholas Building, Toledo 3, Ohio.

NO FINER GLASS THAN
LIBBEY·OWENS·FORD

HI-TEST L O F SAFETY PLATE

STOP with TRU-STOP —the EMERGENCY BRAKE that prevents accidents

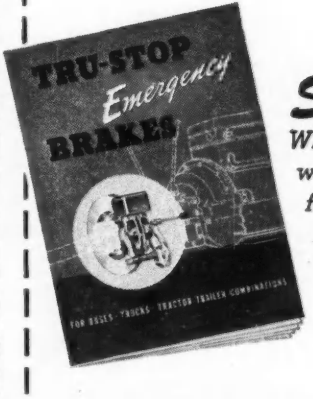


"Parking Brake Accidents" are not the only kind that can be prevented by TRU-STOP Emergency Brakes. Because TRU-STOPS are engineered to **decelerate** and **stop**—as well as **hold**—the loaded vehicle. Thus they can be depended upon to . . .

1. **Supplement** service brakes when there is need for a quick stop . . .

2. **Supplant** service brakes—allow the driver to continue safely in case of service brake failure. And, of course, to . . .

3. **Hold** the loaded vehicle on practically any up- or down-grade after it has come to a full stop.



Send for descriptive catalog **DH-33.** *When you read it, you will realize why more and more safety-minded fleet operators are specifying TRU-STOP Emergency Brakes on new equipment. Write our Detroit office.*

ACCO 6-235 General Motors Bldg., Detroit 2 • 1119 Santa Fe Avenue, Los Angeles 21 • Bridgeport, Conn.

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

TRU-STOP Emergency BRAKES

TRADE MARK

In Business for Your Safety

THERE'S NO TOOL LIKE

SPEED WASH

TO CUT DOWN WASHING TIME

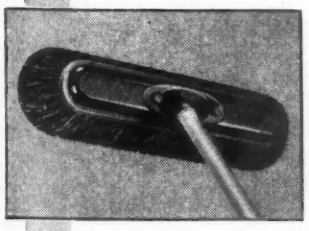


Actually Reduces Washing Time 40 to 60%

SPEED WASH fountain brush eliminates all waste motion in truck washing. Clean, fresh water is constantly fed through the handle and eight jets in the brush, right to the washing surface. Speed Wash is easy to handle—entire weight is only 40 ounces.

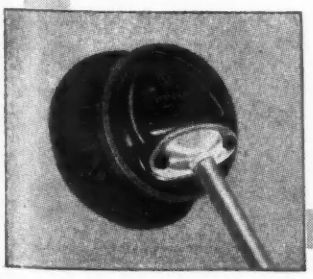
Exclusive construction of Speed Wash makes for long service at low cost. Tufts of Nylon and Horsehair are hand-stitched into block with rust proof wire; they cannot come out or come loose. Block is covered with a permanent steel back. Five foot light weight steel handle is detachable; brush head is economical to replace.

Proved by thousands of users under widely diversified conditions, Speed Wash is unconditionally guaranteed to meet your requirements. Order the style of Speed Wash that best fits your needs on the handy coupon below. Include check for post paid shipment. If you are not completely satisfied, your money will be refunded in full upon return of the brush.



No. 240 Oblong Speed Wash has 11" back. Ideal for washing large trucks, trailers and busses.

Complete with 5' handle **$11.75**



No. 250 Round Speed Wash has 5½" diameter back. Designed for washing light trucks.

Complete with 5' handle **$14.25**

HANDY ORDER BLANK

Milwaukee Dustless Brush Co.
530 North 22nd Street • Milwaukee, Wis.

DATE_____

Gentlemen: Please ship the following Speed Wash brushes.

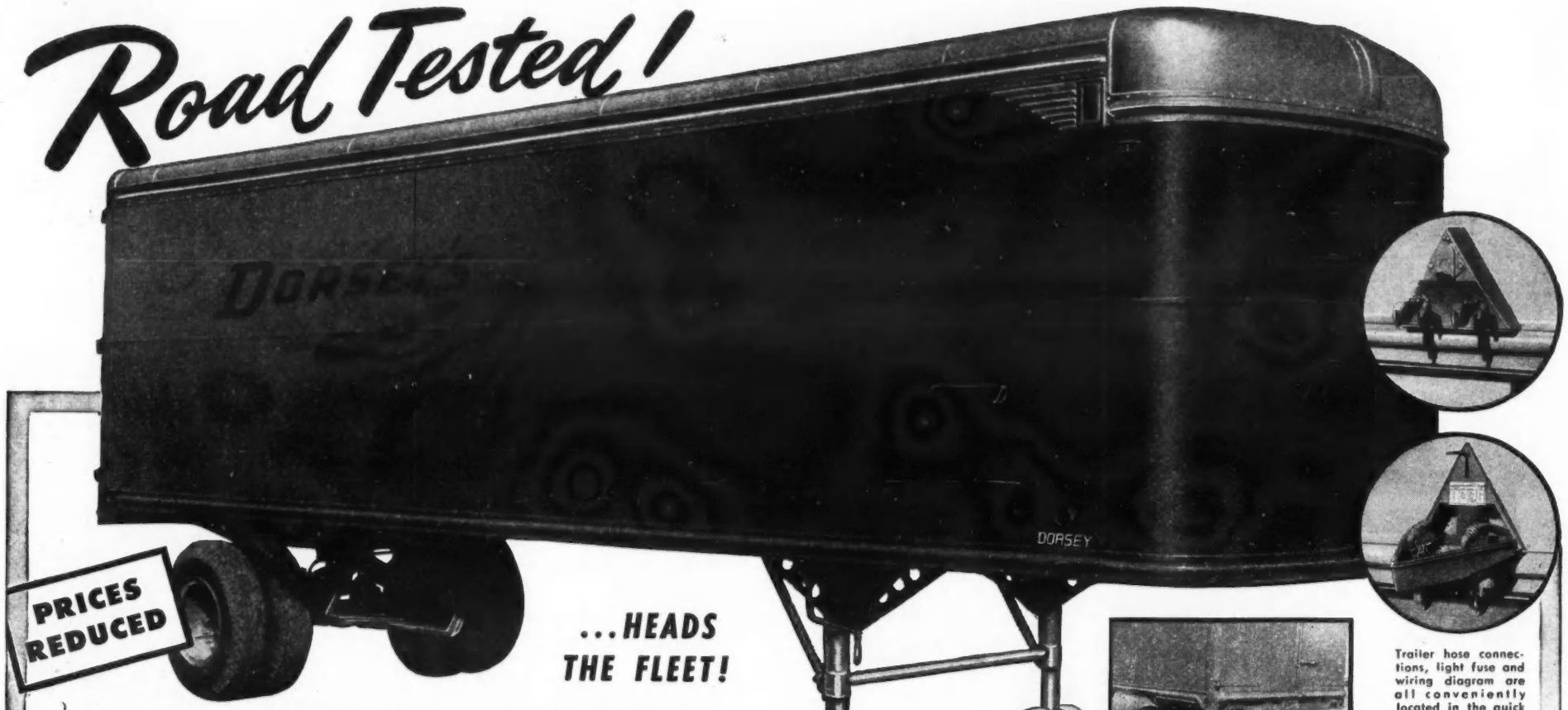
QUANTITY	DESCRIPTION	PRICE	TOTAL
	No. 240 Oblong Speed Wash		
	No. 250 Round Speed Wash		

NAME_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

Road Tested!



PRICES REDUCED

...HEADS THE FLEET!

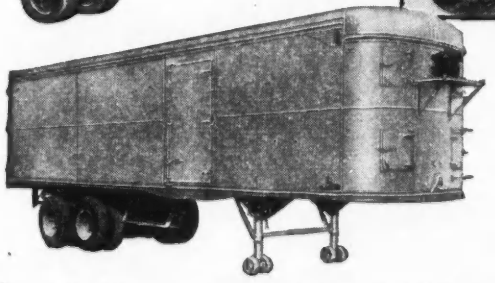
NEW REDUCED PRICES make the Dorsey Fleet Chief Van the outstanding buy in highway transportation. Dorsey's exclusive construction has made the Fleet Chief lighter and stronger . . . and experienced operators claim it is the finest in fleets.

Every Model, Freight Van . . . Produce Van . . . Refrigerator Van . . . Livestock Van . . . Furniture Van and the new Grain Trailer has been carefully engineered to combine all of the features required by operators for their specialized hauls.

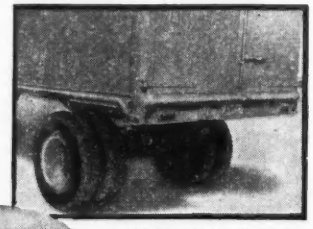
Available in single and tandem axle designs with factory built options to suit all transportation requirements, the Fleet Chief makes your equipment dollar go farther.

(See your nearest Dorsey Distributor or write . . .)

DORSEY TRAILERS ELBA, ALABAMA, U. S. A.



The Dorsey Fleet Chief Produce Van is an outstanding example of the many standard models available. Completely equipped at the factory, ready for operation.



All Fleet Chief Vans are now being produced with an attractive and heavy duty Bumper. New and distinctive lighting has also been provided including Combination Stop, Tail and Directional Signal with Chrome finish

The rear view of the Fleet Chief Produce Van shows the sturdy step-sealed doors and step-sealed ventilator doors with chromium plated hardware. Bumper step available at slight added cost.



Trailer hose connections, light fuse and wiring diagram are all conveniently located in the quick opening service outlet cabinet

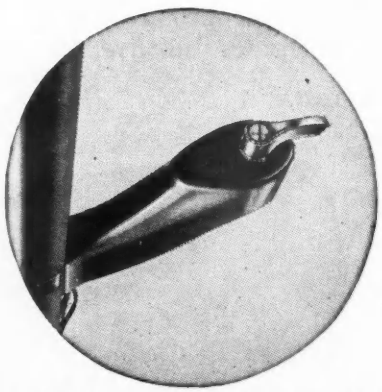
Switch to Safety with GUIDE

HEAVY-DUTY HIGH-QUALITY DIRECTION SIGNAL

for Trucks and Busses



The Guide double-face unit (shown here), for front-fender mounting, is visible from both front and rear, signaling approaching, as well as following vehicles. Single-face units, for either front or rear mounting, also are available. All units have visors, for improved visibility. A lens concentrates the light to make the flashing arrow visible, day or night.



The direction-signal switch, in a heavy metal housing, is readily attached to any steering column, just below the wheel. The illuminated plastic switch lever blinks on and off while the signal is operating—a tell-tale to inform the driver that the lamps are flashing their friendly warning to other vehicles.

Guide has developed this heavy-duty, easy-to-install direction signal specially for truck and bus installations. The direction signal is low in cost—high in value . . . built of the highest quality materials and designed for long-life service.

The Guide direction signal flashes its amber warning clearly in bright sunlight or in stormy weather. It eliminates the danger of risky hand or arm signals—assures greater driving safety with maximum reliability.

Follow the lead of hundreds of bus and trucking companies . . . switch to safety with a Guide direction signal.

GUIDE LAMP—A UNITED MOTORS LINE
Available Everywhere Through
UNITED MOTORS DISTRIBUTORS

UNITED SERVICE MOTORS

Guide LAMP

Division of General Motors
Anderson, Indiana

NOTHING COSTS MORE THAN A TIRED DRIVER



...and Nothing Contributes More to Driver Fatigue than Poor Seating

Ordinary seats punish drivers with thousands of jolts, jars and rebounds every day. Resulting fatigue ruins schedules, piles up repair costs and skyrockets insurance rates. That is why more new trucks are being equipped with Bostrom hydraulic seats. It's the only truck seat that really absorbs shocks. Get positive proof—write for free folder *"12 Eye Openers Concerning Truck Seats."*

Factory Installed at Nominal Cost

Bostrom hydraulic seats are now available as standard equipment at no extra cost, or as optional equipment at slightly higher than regular seat cost, on the following makes of trucks:

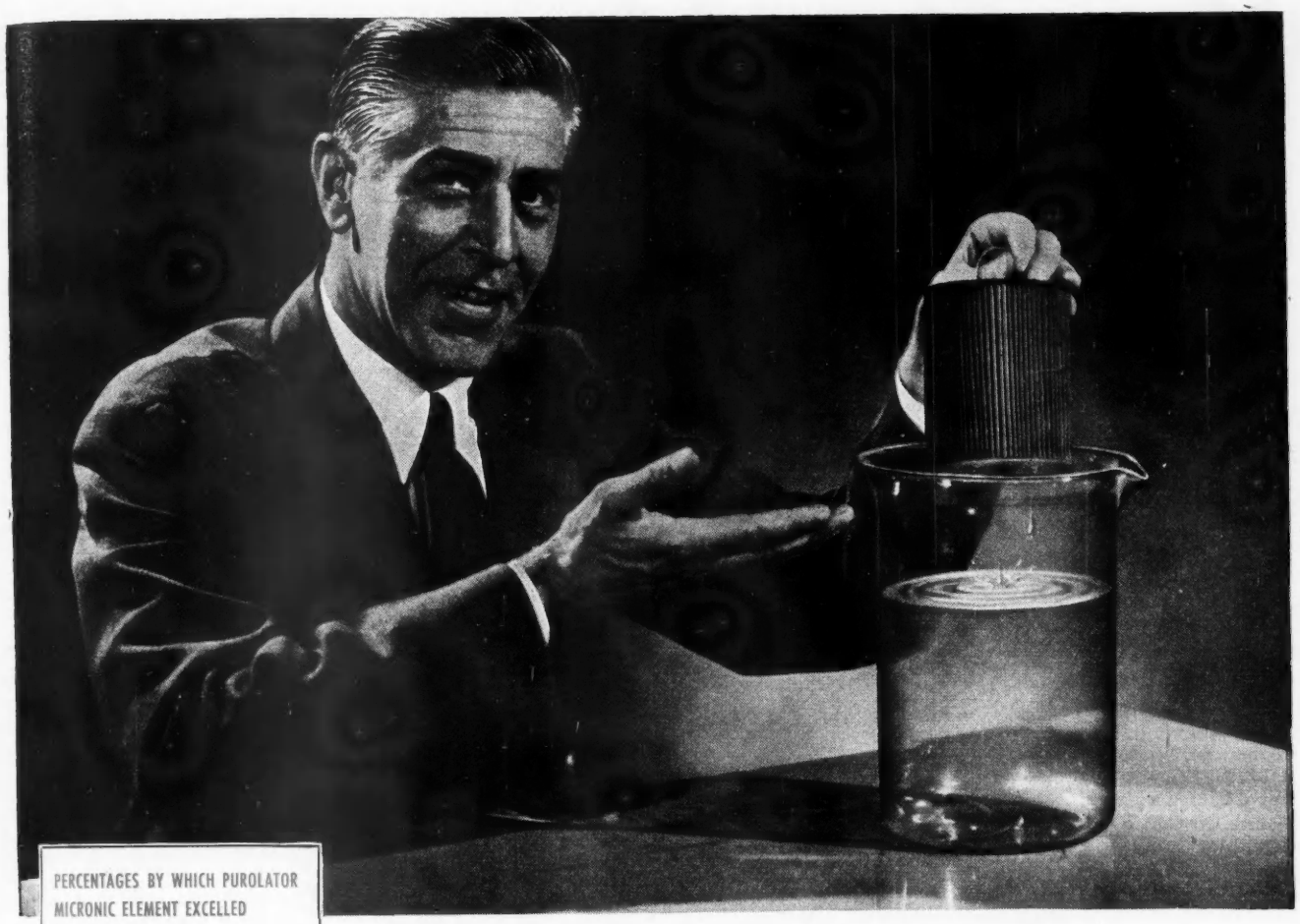
- GMC
- Diamond T
- Federal
- Reo
- Hendrickson
- Peterbuilt
- Walter
- Ward La France
- FWD
- Dart
- Oshkosh
- Coleman



BOSTROM

BOSTROM MFG. COMPANY

133 West Oregon Street • Milwaukee 4, Wisconsin



PERCENTAGES BY WHICH PUROLATOR MICRONIC ELEMENT EXCELLED COMPETITIVE TYPES

COMPETITOR	IN AVERAGE DIRT RETENTION PUROLATOR LED BY:
A	199%
B	220%
C	113%
D	547%
E	164%
F	619%
G	255%
H	339%
I	318%
J	193%
K	237%

AVERAGE PUROLATOR SUPERIORITY *290%*

Water dilution can't warp, distort, or disintegrate this oil filter!

HERE'S PROOF, TOO, THAT PUROLATOR'S MICRONIC ELEMENT REMOVES 290% MORE ABRASIVES!

Put a Purolator Micronic Oil Filter element in a jar of water . . . let it stand for as long as 100 hours . . . *it will not warp, distort, or disintegrate!*

That's an extremely important Purolator advantage, since the oil in your average crankcase is frequently diluted with as much as 5% water. And as little as 2% water dilution causes many ordinary elements to swell up and practically shut off the oil flow through the filter within a few short hours.

But here's the *real* pay-off . . . Purolator assures *complete* filtration. For the Purolator Micronic Oil Filter removes an average of 290% more abrasives (as proved in above test results) because it filters particles measured in microns (.000039 of an inch) . . . has a filtering surface 5 times that of old-style filters . . . does not permit channeling or unloading.

If you want fewer engine repairs and less down-time . . . let your near-by Purolator supplier equip your entire fleet *now*. Remember — he has a genuine Purolator Micronic Refill for practically every make of vehicle and oil filter!

PUROLATOR PRODUCTS INC.
Newark 2, New Jersey
and Windsor, Ontario, Canada

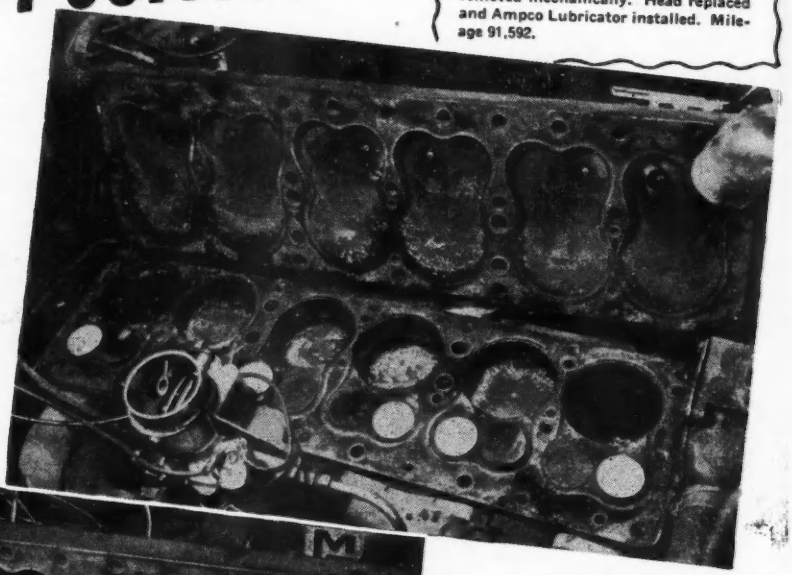
PUROLATOR
MICRONIC OIL FILTER
"FIRST IN THE FIELD OF FILTERING"

Your Fleet Maintenance COST REDUCED

HERE'S PROOF POSITIVE!

BEFORE

Photograph of engine with cylinder head removed. Note accumulation of carbon and engine deposits on pistons and cylinder walls. Exhaust valves discolored from overheating and improper seating. No combustion deposits were removed mechanically. Head replaced and Ampco Lubricator installed. Mileage 91,592.



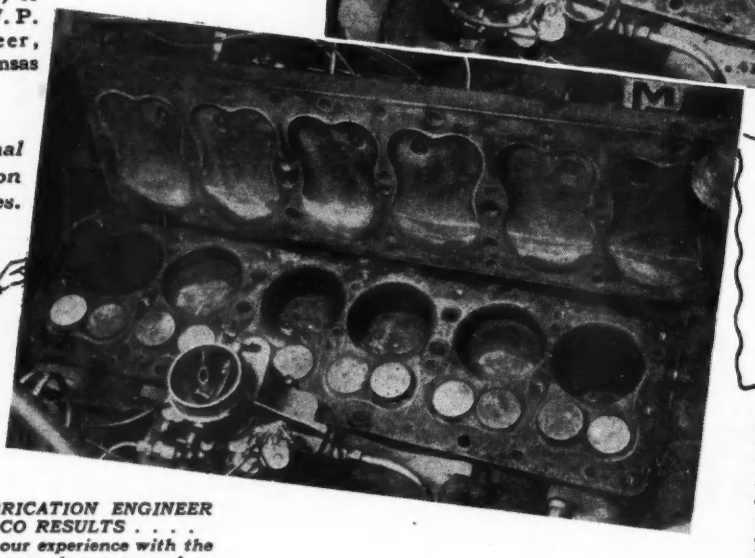
The **NEED** for improved Upper Cylinder Lubrication, within every engine, is established by accumulated deposits which result from combustion and block normal channels of lubrication to valves, rings, cylinder walls and pistons.

Positive Upper Cylinder Lubrication involves the problem of immediate and even distribution of the lubricant to all cylinders.

The *solution* is confirmed by proof positive, in the report (below) of S. M. McKee**, V. P. and Chief Engineer, Nourse Oil Co., Kansas City, Mo.

for all Internal Combustion Engines.





AFTER

Photograph of same engine after 1577 miles of improved performance with Ampco. Ampco-sprayed oil vapor removed accumulated carbon and engine deposits. No mechanical work done on this engine. Note improved heat condition of valves, and clean pistons and cylinders, with ridge removed. Average compression improvement over 10 lbs. per cyl. Mileage 93,169. Vehicle in daily service.

Co-operation with a number of Major and Independent Oil Companies has provided research of Ampco Lubricators for all types of engines, and for the development of improved, properly compounded Upper Cylinder Lubricants.

QUALIFIED LUBRICATION ENGINEER CONFIRMS AMPCO RESULTS . . . .

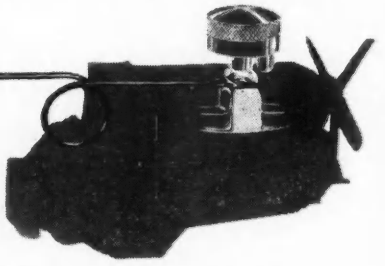
"With reference to our experience with the Ampco Lubricator, we have some four thousand of these units in service—about 80% of these in fleet service. The results established in fuel savings, greater power output and smoother, over-all engine performance, leads us to believe, without a doubt, that at last the upper cylinder parts of these hot engines can be lubricated properly, and that engine life can be increased measurably. With engines, on which the lubricator has been installed for some time, operators report much better performance of fuels, which leads us to believe that the fuel octane requirements are lowered for any given engine, once the upper cylinder parts and intake manifold are cleaned and remain clean." (*S. M. McKee, V. P. & Chief Engineer*, Nourse Oil Co., Kansas City, Mo.)

The *Facts* are that the Ampco Patented, exclusive method of Upper Cylinder Lubrication alone provides for the immediate introduction of the lubricant as a completely dispersed oil spray or vapor to reach every cylinder and operating part in the heat-wear zone on the *intake stroke* for *lubrication before ignition and combustion occurs in an engine!* Check with your Oil Company or Automotive Wholesaler Concerning Your Fleet Requirements on Ampco.

Patents Pending

VAPOR Ampco LUBRICATOR ®





MANUFACTURED BY

AUTOMOTIVE & MARINE PRODUCTS CORP.

87 HARVARD AVENUE, BOSTON 34, MASS.

Write for · Profit-Performance Story of Ampco today.

AMPCO - - FOR BETTER THAN NEW ENGINE PERFORMANCE



"FIBERGLAS*-INSULATED BATTERIES *last us longer"*

Keeping big fleets on the road and rolling is a large-size order . . . calls for top quality, well serviced equipment. Calls for batteries that perform well and last longer. That's why most big fleets use the battery that's double-insulated with Fiberglas Mats.

One of these big fleets is the Belt Transfer & Storage Co. in Parkersburg, West Virginia. According to the owner, Mr. M. Belt, this fleet requires: . . . *"batteries that can take it, when it comes to cross-country trucking."* And he has them, too, because he states: *"Our records show that our Pure Oil batteries double-insulated with Fiberglas Retainer Mats stay with us longer. They're dependable and keep us on the road with fewer costly time-outs for battery service."*

You'll find practically all of the battery manufacturers double-insulate their quality lines with Fiberglas Retainer Mats. Do it—because Fiberglas Mats hold the power producing material on the plates longer—contribute substantially to battery life.

Why not ask your supplier today about these double-insulated-with-Fiberglas batteries. Owens-Corning Fiberglas Corporation, Dept. 960, Toledo 1, Ohio.

*FIBERGLAS is the trade-mark (Reg. U.S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.

**FOR LONGER, BETTER SERVICE . . .
GET BATTERIES
DOUBLE-INSULATED WITH**

OWENS-CORNING
FIBERGLAS

OWENS-CORNING FIBERGLAS CORPORATION, TOLEDO 1, OHIO

CHOOSE *Plymetl* . . .

for truck bodies Operators report it LASTS LONGER

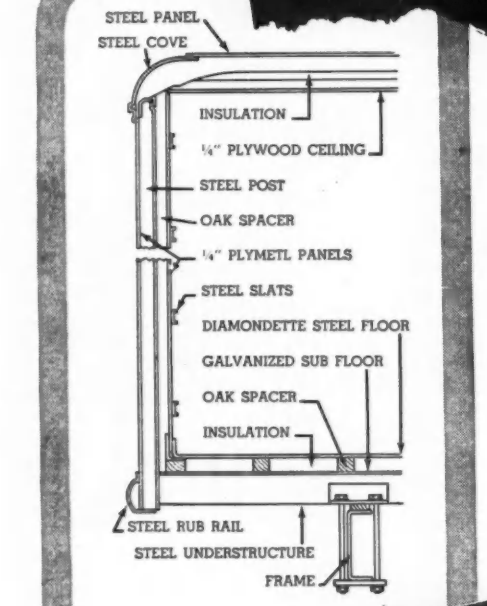




Diagram of construction used by Atlas Body Corp. for Sheffield Farms of New York. Finished truck illustrated.

If you are a body builder or fleet operator interested in sound economy, you'll be interested in this:

"We have found this material to be very satisfactory and have encouraged its use with the dairy industry generally. The reaction has been unusual in that ***most fleet operators are convinced that Haskelite Plymetl will outlast any other type of panel or construction*** they have used.

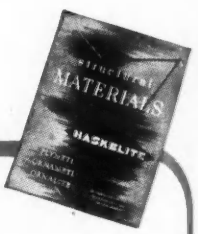
-excerpt from a letter written by
S. A. Berger, Vice-President
Atlas Body Corporation, Phila.

And here are two cases that demonstrate the serviceability of Plymetl

(1) A Plymetl panelled truck of a well-known candy manufacturer, travelled 700,000 miles in six years and outlasted the four new chassis used in this period.

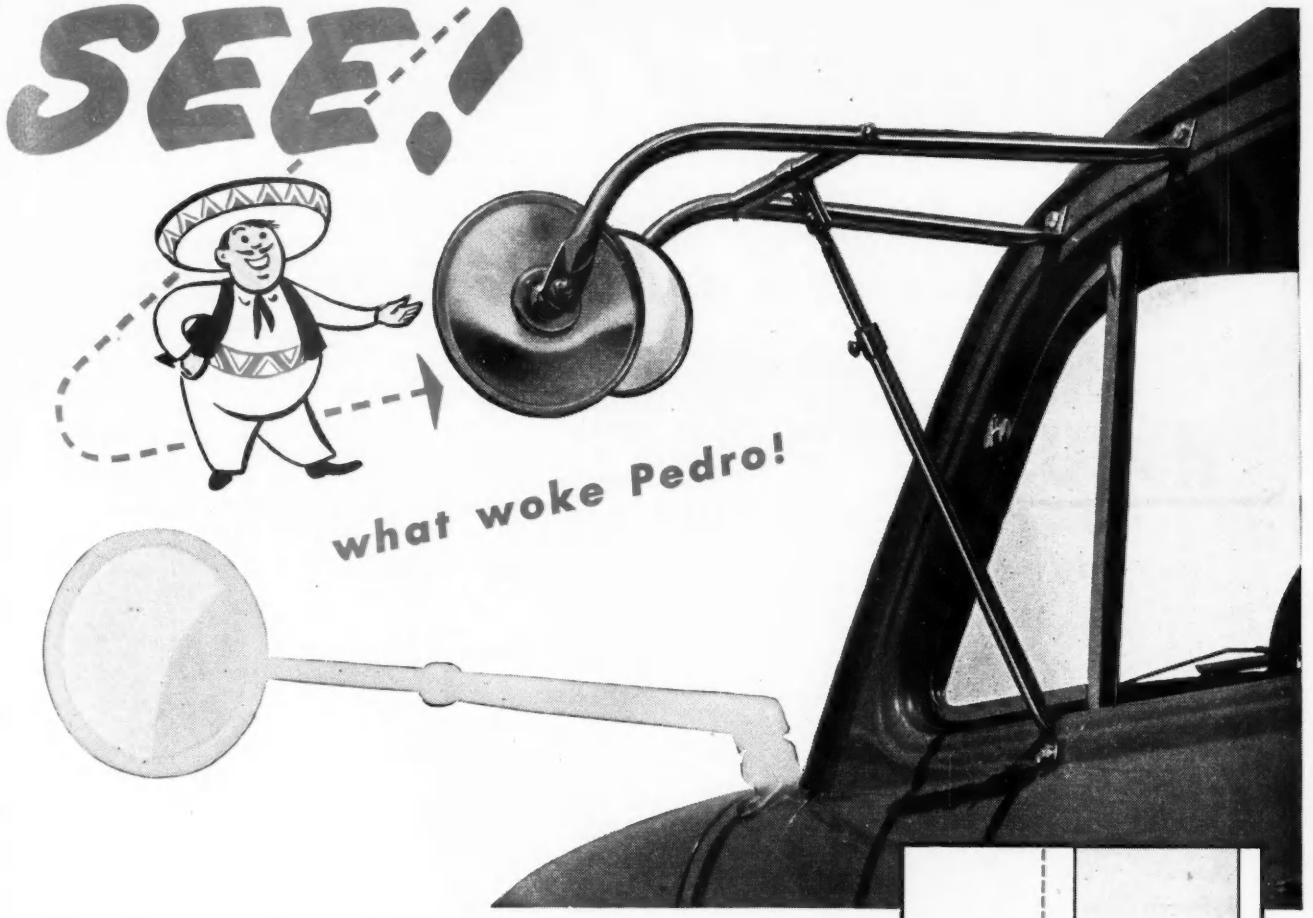
(2) A New York food distributor writes "Our Experience has proved that Plymetl is superior to other materials in many ways. Better appearance, ***longer life,*** light weight, lower maintenance costs . . . "

These are the facts, presented by builders and users, that prove Plymetl the best buy for the truck operators' dollar. Smooth, flat, ripple-free; impact and vibration resistant . . . Plymetl makes a finer looking, longer lasting body. Get all the facts on Plymetl. ***Write for the new Plymetl Bulletin.***



® **HASKELITE** *structural materials for men who build better*

HASKELITE MANUFACTURING CORPORATION Dept. TC Grand Rapids 2, Mich.
New York Chicago Detroit Philadelphia St. Louis
Canada: Railway & Power Engineering Corporation, Ltd.



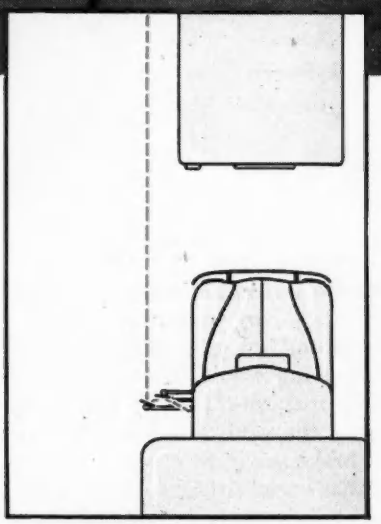
THE PASSING EYE TRUCK MIRROR

gives driver a clear view of approaching traffic around vehicle ahead

Now truckers can drive with greater safety — without having to pull out into approaching traffic to see if the road is clear for passing. The Passing Eye Truck Mirror gives a perfect view at a glance of the approaching traffic around vehicles *ahead*.

Made up of a 5″ mirror head and a 4″ mirror head arranged as shown in diagram above, the Passing Eye does not interfere with regular rear view mirror or with left vision from truck cab. It's a brand new safety device that has been tested on truck proving grounds. It's solidly built for long, durable wear.

No wonder Pedro's excited. You'll want to get complete details on this new safety invention, too. Write us today.



5″ mirror, facing forward, reflects view of approaching traffic into 4″ mirror positioned like ordinary rear view mirror. Image is not reduced — view is clear and inclusive. Use of finest plate glass mirrors assures perfect, ripple-free view. Finished in either silver grey baked enamel or life long chrome.

NORLIPP *Reflects* QUALITY

THE NORLIPP COMPANY

5925 SO. LOWE AVENUE
CHICAGO 21, ILL.

You are sure of TOP QUALITY with Inlite Brake Linings



Maybe you could save a little money, on the go, by installing brake linings of "second" or even "third" quality. But that saving would be swallowed, along with operating profits, because you'd lay up the vehicle sooner, and oftener, for brake service.

That's why Inlite, for all commercial vehicles, is made in only one quality, *top quality* . . . tested in General Motors Laboratories and at the Proving Grounds . . . produced under constant laboratory control.

Slash your maintenance costs with Inlite. Compounded to give the scientifically correct friction on each brake of each vehicle, it assures smooth, straight-line stops, no chatter or grab, positive braking in any weather, longer mileage between replacements, more stops per dollar, lower cost to you. Specify it and use it, *always!*

A General Motors Product

UNITED SERVICE MOTORS

A UNITED MOTORS LINE

Available Everywhere Through United Motor Service Distributors

INLITE GIVES YOU

• straight-line stops • long service • low cost • General Motors quality control

INLAND MANUFACTURING DIVISION
General Motors Corporation, Dayton, Ohio





GO! STOP! SHIFT! REVERSE! JOCKEY!
ALL EASIER FOR THE DRIVER!

LIPE ML CLUTCH

NO BABYING! NO GRAB! NO SHOCK! NO JERK!
MORE CONTROL FOR THE DRIVER...
MORE CLUTCH HOURS ON THE ROAD!

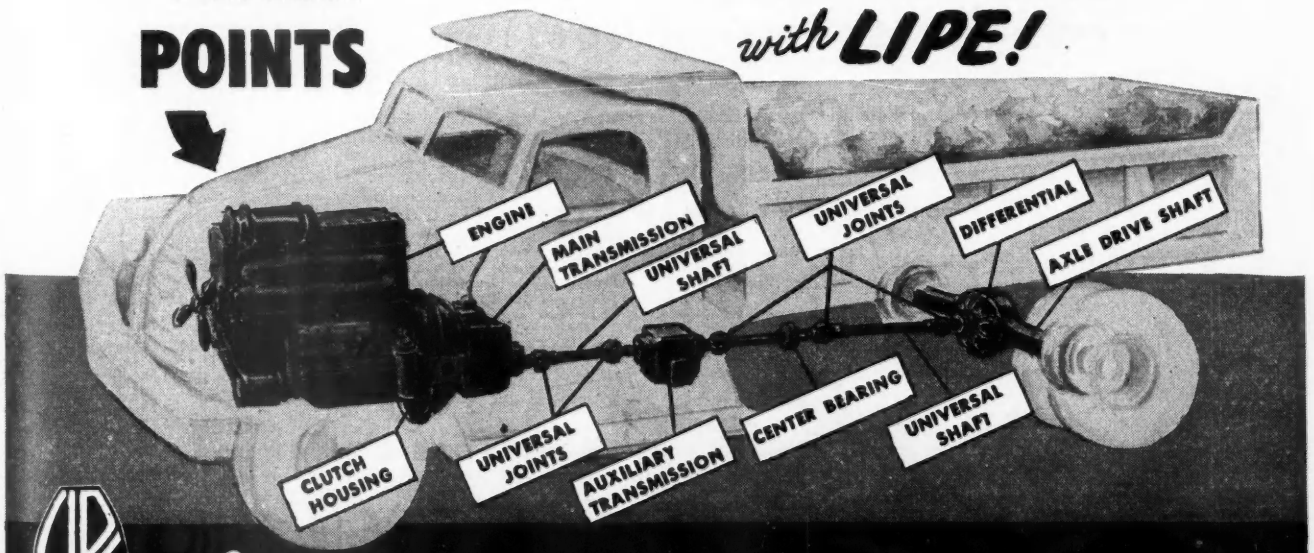
Actually, the Lipe ML Clutch engages so smoothly that it gives the driver more control over the vehicle. Saves wear and tear of vital gears, drive shaft, axles, universal joints and bearings. This means less maintenance . . . more hours on the road.

Simple design—The Lipe ML Clutch has only one spring. Its 20 louvred levers act instantly, simultaneously, uniformly . . . and circulate air for cooler operation.

Easier adjustment—The simple removal of a few shims compensates for the dissipation of friction material. With ordinary tools, a mechanic can easily disassemble and reassemble the Lipe ML Clutch.

EASIER! ON THESE 14 VITAL POINTS

LESS MAINTENANCE with LIPE!



LIPE ROLLWAY

Lipe-ROLLWAY CORPORATION SYRACUSE 1, N. Y.

Cable Address: LIPEGEAR

Thor

MOST POWERFUL EVER BUILT!

Silver Line

ELECTRIC

IMPACT WRENCH



AMAZING ALL-PURPOSE IMPACT TOOL FOR SCORES OF JOBS!

For complete information about this great new Thor Silver Line ⅜" Electric Impact Wrench . . . including data on the scores of accessories that can be used with it . . . see your Thor distributor or write for Circular 1025.

INDEPENDENT PNEUMATIC TOOL COMPANY

Aurora, Illinois

Export Division: 330 West 42nd Street, New York 18, N. Y.

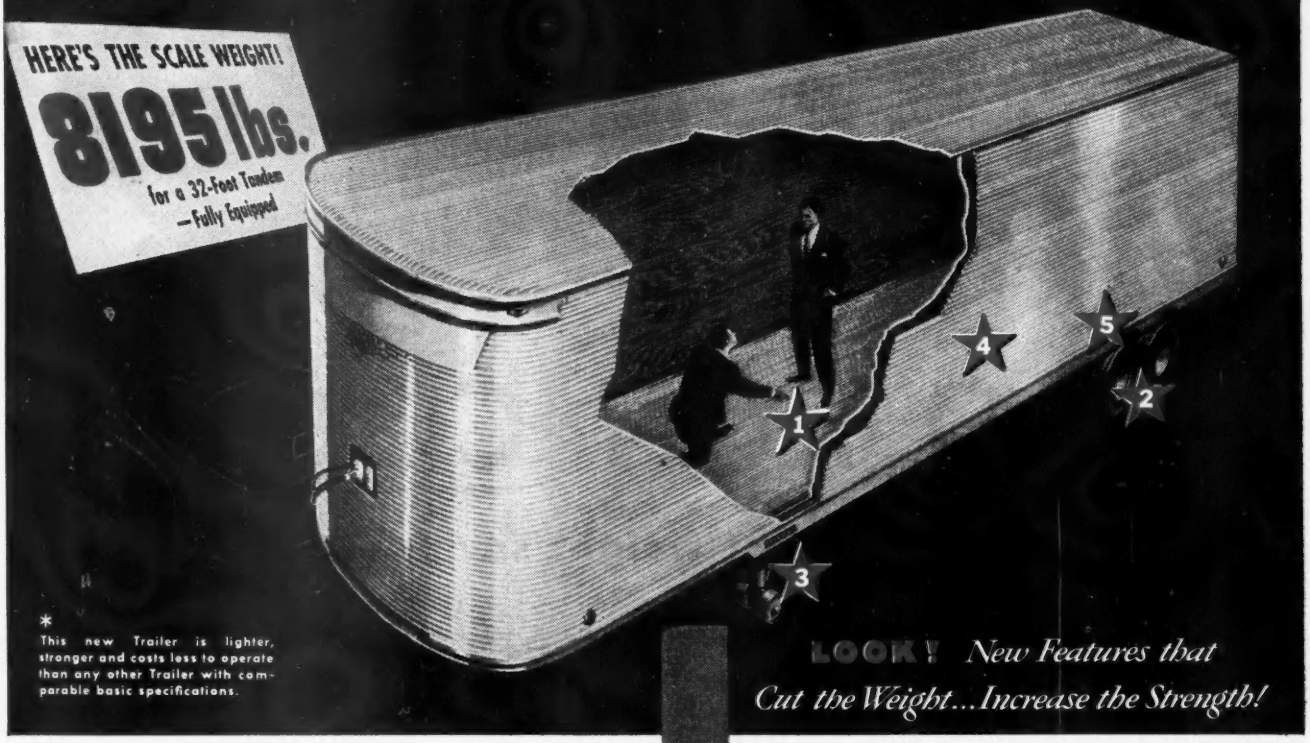
Birmingham Boston Buffalo Chicago Cincinnati Cleveland Denver
Detroit Houston Los Angeles Milwaukee New York Philadelphia
Pittsburgh St. Louis St. Paul Salt Lake City Seattle
San Francisco Toronto, Canada Sao Paulo, Brazil London, England

Thor PORTABLE POWER TOOLS

PNEUMATIC TOOLS • UNIVERSAL AND HIGH FREQUENCY ELECTRIC TOOLS • MINING AND CONTRACTORS TOOLS

Here it is! LIGHTEST, STRONGEST LOWEST-COST TRAILER* *in the world!*

The sensational new FRUEHAUF STAINLESS STEEL *out-hauls...out-earns...out-lasts them all!*



* This new Trailer is lighter, stronger and costs less to operate than any other Trailer with comparable basic specifications.

LOOK! *New Features that Cut the Weight...Increase the Strength!*

		THIS MUCH LIGHTER
1	**NEW FLOOR** — Magnesium, exclusive design. Strongest Trailer floor for its weight ever built.	Up to **800 lbs.** lighter
2	**NEW WHEELS**—Drop forged aluminum. Stronger, more rugged than steel wheels they replace.	**93½ lbs.** per axle lighter
3	**NEW SUPPORTS** with ultra light-weight features. Even stronger and easier acting than before.	**135 lbs.** lighter
4	**NEW GEAR BOXES** on Gravity-Tandem models. New design affords greater shock resistance.	**45 lbs.** lighter
5	**NEW BRAKE SHOES**—Fabricated from rolled steel. Free from usual casting defects.	**40 lbs.** per axle lighter

IT'S THE NEW FRUEHAUF STAINLESS STEEL . . . an engineering triumph in Trailer-making. Amazing weight-savings have been accomplished in every part . . . from roof to road. And yet the strength has been *increased.*

Fruehauf engineers have combined stainless steel and other modern lightweight metals into the lightest, strongest Trailer in the world. Here's what that means to *you!* Greater payload capacity . . . lower maintenance and operating costs . . . longer Trailer life.

Sensationally low maintenance cost! One operator, with 385 units, reports an average repair cost of $12.85 per Trailer for 1948—less than the cost of keeping a conventional Trailer painted! Get the facts about the new Fruehauf Stainless Steel. They're really amazing! See a Fruehauf representative . . . or write us today. The Fruehauf Trailer Company. Detroit 32—Los Angeles 11. In Canada: Weston, Ontario.

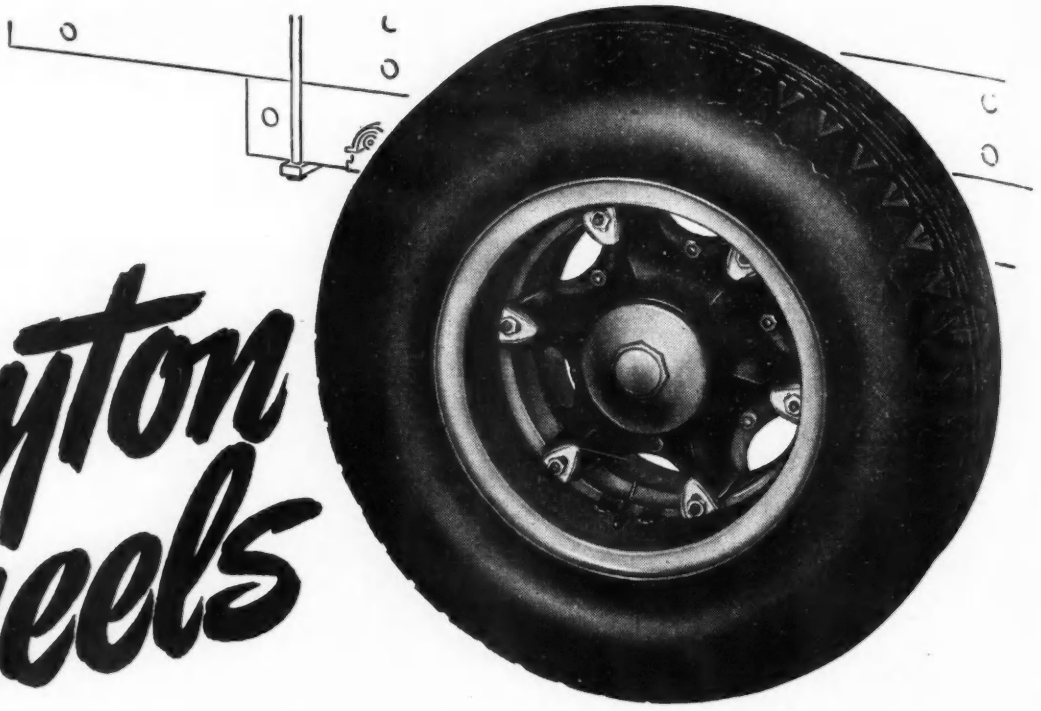
UP TO 5 YEARS TO PAY! **Qualified operators can have up to 5 years to pay—the best evidence you could ask for that Fruehauf's do last longer. Ask about our "pay as you earn" financing plans.**

FRUEHAUF *Trailers*

WORLD'S LARGEST BUILDERS OF TRUCK-TRAILERS

Special taxes paid by trucks last year for road building and maintenance alone equalled all the money spent by all the states for all the roads in 1946—40,000 miles of them.

Hear Harrison Wood in "This Changing World"—every Sunday over ABC. Consult your local Paper.



Dayton Wheels

DO RUN COOLER!

(and effect weight savings)

The fanning action of the spokes on Dayton Cast Steel Wheels cause them to run *much* cooler. The spokes create cool air currents, and with the help of the spacer band, direct these currents against brake drums and inner walls of the inside tires. Increased pressure exerted by each of the rim nuts on the clamp bevel against the demountable rim prevents rim slippage and consequent uneven tire wear. Demountable rims also speed tire changing.

Although Dayton Wheels are so strong they never wear out in service, they are very light and in many instances customers have saved considerable weight, where weight counts, by specifying Daytons. They help to lower operating costs. It costs less for service on Daytons than for any other wheel. Smart operators have taken advantage of these savings for many years. In every detail, Dayton Wheels are right for trucks, buses and trailers.

THE DAYTON STEEL FOUNDRY COMPANY, DAYTON 1, OHIO

Dayton Steel Products are serviced by distributor members of the National Wheel and Rim Association.

Dayton SPOKE TYPE CAST STEEL Wheels

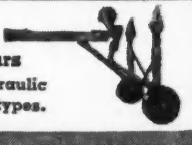


Dayton Brake Drums
Drums assembled to the wheels at the factory give more perfect concentricity.



Dayton 5th Wheels
Standard equipment on many trailers. Quick coupling. Positive operation.

Dayton Landing Gears
Made in both hydraulic and mechanical types.



Valvoline Motor Oil protects in the DANGER ZONE



. . . cuts repairs and overhauls

Most unnecessary wear takes place in the *Danger Zone*—that last few hundred miles before the drain. Some apparently good oils break down, thin out, lose their cleaning action.

You can't detect these weaknesses by the "look" or "feel" of an oil. But Valvoline gives you 6-way proof of *complete* lubrication—right up to the *last mile* of any normal drain period.

VALVOLINE's 6-Point Proof of Quality

1. Made from world's finest crude—100% Pennsylvania.

2. Selective Extraction removes the few impurities—leaves *all* the natural lubricating factors in the finished oil.

3. Cleanest type oil known. Additives protect against *outside* contamination.

4. Highest Viscosity Index—best protection against thinning at engine temperatures.

5. Passes every test with honors—in the laboratory—on trial runs—in actual use.

6. World's longest record of customer satisfaction—America's first Pennsylvania Oil.

FREE to Valvoline Users Valuable Laboratory Service

Crankcase drainings analyzed—with suggestions on correcting mechanical and operating conditions of your units—for greater oil economy and engine safety.

ASK YOUR VALVOLINE MAN



VALVOLINE

100% Pennsylvania

MOTOR OIL

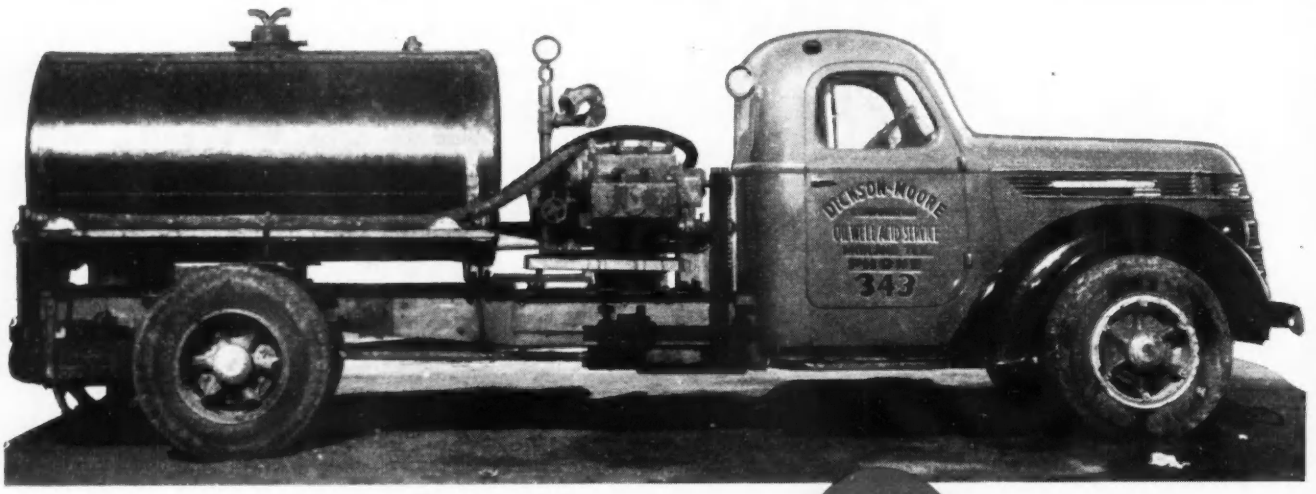
FREEDOM VALVOLINE OIL COMPANY

Freedom, Pennsylvania

POWER....

when you want it...where you want it

DIRECT FROM YOUR TRUCK MOTOR



Power on the job -- in the field -- wherever your truck can travel -- is the most economical, the speediest!

Simply put this power take-off on your standard truck chassis and transmit the full power of the truck motor by V belt or chain to any equipment that can be installed back of the cab.

The PTO turns the same number of revolutions and in the same direction as the drive shaft -- either forward or reverse. In effect, it becomes a section of the driveshaft.

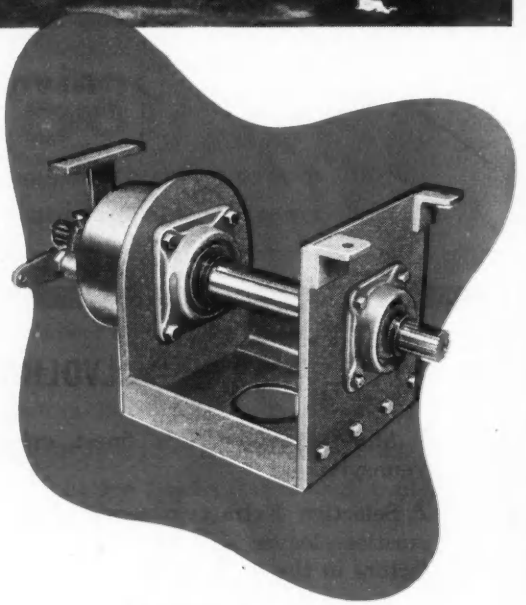
This same power take-off, basically unchanged, yet with improvements and refinements, has been manufactured and in service for nearly twenty years. It has been fully field tested and proven. Thousands of these units are giving satisfactory service over the country.

Typical users: Public utility companies, city, county and state highway departments, railroads, oil companies, oil producers, farmers, contractors.

Get full specifications of this equipment — Send for illustrated folder, CG-9.

CEMCO INDUSTRIES, Inc., GALION, OHIO

Manufacturers of hydraulic operated tailgates, underbody hoists and power take-offs.



CEMCO MODEL D-1
Hand lever in cab enables driver to operate PTO from cab.

CEMCO *Split-Shaft*

POWER TAKE-OFF

"Drums last longer with Johns-Manville Brake Blocks"



. . . and you'll get higher temperature resistance, too

ACTUAL laboratory tests have proved that Johns-Manville Asbestos Brake Blocks have higher temperature resistance . . . the result of a new formulation in all J-M Brake Blocks now in full production.

But you get much more than this.

Your brake drums will wear better too . . . because the new J-M Brake Block is the result of a scientifically *balanced* formulation that wears slowly, evenly, without costly scoring or checking of drum surfaces.

All this has been proved on the Heat Check Analyzer, an exclusive J-M laboratory device for checking both block life and drum life. And these laboratory tests have been carefully checked against actual field results.

You can prove it too . . . by trying the new J-M Brake Blocks on your next brake job. You'll have both blocks and drums giving you bonus mileage . . . bonus mileage that means lower operating costs.

PRODUCERS OF THE FAMOUS
4-STAR FLEET TESTED SETS

Johns-Manville

JM PRODUCTS *Asbestos*

BRAKE LININGS
BRAKE BLOCKS
CLUTCH FACINGS

FRICTION MATERIALS

STOPS DIRT... STOPS WATER... STOPS TROUBLE



DUREX GASOLINE FILTER

A bit of fuel-borne dirt that gets as far as the carburetor can play hob with road schedules—and with profits. That's why a Durex, the filter with a *metallic* filtering element, repays its small cost over and over again.

Examine the Durex filtering element. It looks so dense, almost solid, that you will readily admit that it will stop the tiniest particle of solid matter. It is composed of a myriad of minute bronze spheres, moulded and permanently bonded, with microscopic passages between them. And, because it *is* all metal, it never needs replacement.

To cut maintenance costs . . . to eliminate a frequent cause of roadside delays . . . install the positive-action Durex Gasoline Filter.

POSITIVE-PROTECTION—The Durex porous metal filtering element passes nothing but clean fuel, keeps water and particles of lint, dust and scale from reaching the carburetor.

QUICK INSTALLATION—The Durex unit fits readily into the fuel-feed line of cars, trucks and buses.

EASY MAINTENANCE—The Durex metallic filter element never needs replacement; it's a matter of a few minutes to remove it and flush it clean.

LOW-COST—The Durex Gasoline Filter is priced low . . . its first cost is the last cost . . . it quickly pays for itself, then earns dividends in improved engine performance.

UNITED SERVICE MOTORS

Durex Gasoline Filters are distributed nationally by United Motors Service. Order a supply from your local distributor.

MORAINE PRODUCTS

DIVISION OF GENERAL MOTORS CORPORATION, DAYTON, OHIO



"In a Few Hours . . . Coleman Installations Have Changed These Trucks to Heavy-Duty 4-Wheel Drives"



FORD This Coleman-Converted Ford now hauls capacity loads up steeper grades under all conditions.



GMC Coleman 4-Wheel Drive Conversion gives this GMC truck tremendous power for heavy rock hauling jobs.



INTERNATIONAL Fitted with under-body blade and snow plow attachment, this Coleman-Converted International maintains roads the year around.



CHEVROLET This Coleman-Converted Chevrolet with telephone maintenance body "goes anywhere" for off-the-road repairs and construction.

Easily Serviced, No Special Skill Required!

Fords . . . Chevrolets . . . GMC's . . . Internationals . . . Dodges . . . they can all be easily converted to 4-wheel drives with Coleman Front-End Installations. No expensive tools nor highly trained mechanics for servicing, either. Coleman units are simple in design and precision built. They become an integral part of any standard commercial truck and can be easily maintained by your present service department. Coleman installations give you all the advantages of the 4-wheel drive with no extra burden on your parts department.

Coleman 4-wheel drive installations make it possible for your trucks to haul bigger payloads . . . to perform heavier work with less strain. With 4-wheel drives, the front wheels are pulling part of the load—there's less slippage and bogging down in soft ground.

Coleman Front-End Installations have been successfully used the world over for 25 years. Get maximum performance from your trucks. Convert to 4-wheel drive with Coleman Front-End Installations right away.

MAIL COUPON NOW FOR FULL INFORMATION

American-Coleman Co.
Omaha, Nebraska

Please send me free literature on Coleman Front-End Installations for following trucks: .....

.....

NAME .....

FIRM NAME .....

STREET ADDRESS .....

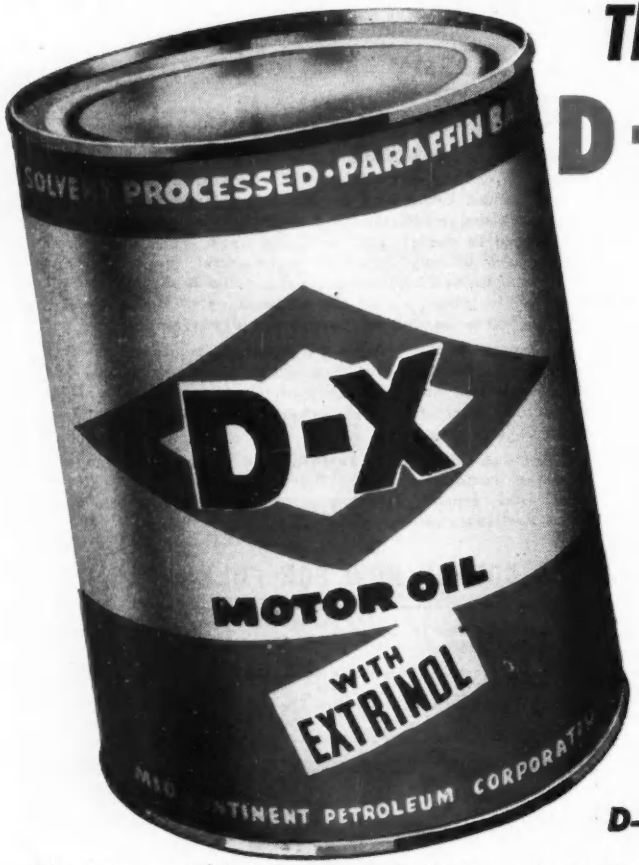
CITY ..... **STATE** .....

The American-Coleman Co.
OMAHA, NEBRASKA

WHEN YOU'RE CHECKING YOUR PROFITS...



When your trucks are running loaded, but the *profits* are not what they should be, check up on the oil you're using to service your fleet. Too often an oil that fails to stand up can make a big difference on the profit sheet.



Then Change to the New

D-X MOTOR OIL

With

EXTRINOL

Here's the *profit* oil for truckers! It's tougher, safer, more economical to use because an "extra"—Extrinol—has been added to help D-X clean motors, protect bearings and fight sludge. It stands up longer! Try D-X with Extrinol and prove to yourself that it is a better oil, or your money back! Call your nearest D-X distributor or write direct for details about this great motor oil.

Many Fleet Owners Also Prefer D-X HEAVY DUTY MOTOR OIL and D-X DIESEL MOTOR OIL. Ask About them.

MID-CONTINENT PETROLEUM CORPORATION

TULSA, OKLAHOMA

Waterloo, Ia. Terre Haute, Ind. Chicago, Ill. Omaha, Nebr. Minneapolis, Minn.

NOW... A REAL IMPROVEMENT IN TRUCK WEIGHTS!

AN L&H WEIGHT TO FIT EVERY TRUCK AND BUS RIM!

LOOK AT THE NEW STREAMLINED DESIGN

S-m-o-o-t-h design—
S-m-o-o-t-h finish—
because they're pressure cast.



Shown above is the completely new L & H-6 designed especially for the International KB-7 truck. Note the cross-section view.

SIMPLIFIES INSTALLATION

The improved line of truck weights because:

- All rim conditions and clearance problems are satisfied with
- A complete series of weights that is
- Simplified in identification and
- Available in 2 oz. graduations for finer balance . . . with
- No need to "hack" or "cut" the weight because

L & H

BALANCE WEIGHTS

Shown here is the basic design of the other weights in the truck series. Cross-section diagrams show shapes of L & H-1 through L & H-5.



IMPROVED MANUFACTURING

permits weights to be individually pressure cast to size (not hand or gravity poured). New improved clip design assures L & H truck weight users the industry's finest product.

Available September 30th

AT NO INCREASE IN PRICE!

COMPLETE PASSENGER WEIGHT PROGRAM AVAILABLE

L & H POINTS TO PERFECTION BALANCE WEIGHTS

Look to L & H for the "BALANCE" of the Year.

MANUFACTURED BY

HARLEY C. LONEY CO.

DETROIT 21, MICH.

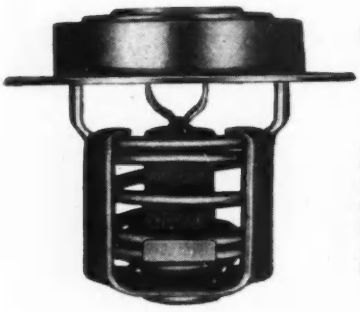
PREPARE JOB-WEARY MOTORS for WINTER OPERATION

Install

DOLE DV or *Adjustable*

REPLACEMENT THERMOSTATS

For better performance—replace worn thermostats. Improved efficiency in cooling systems helps to put new life into tired motors. Accurate motor temperature control effects worthwhile savings in gas, oil and motor wear. Dole replacement thermostats are available in a range of types for all cars and trucks.



High Efficiency

DV for 1948 and later cars and trucks

A totally-new type thermostat designed to control high pump pressure in modern sealed cooling systems with pressure caps. Positive-acting, a superior thermal unit that shows amazing results in economy and performance.

The All-Season ADJUSTABLE

for many makes and models

Dole adjustable thermostats contribute to improved performance by dependable temperature control at all seasons and for every type of anti-freeze. Visible results are quicker warm-up, reduced crank case dilution, less engine wear—plus savings in gas and oil.

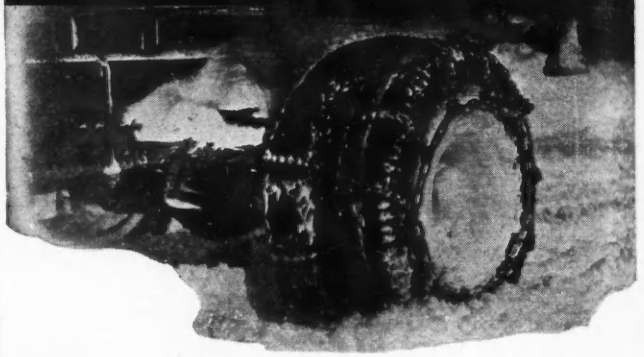


• CONTROL WITH DOLE

THE DOLE VALVE COMPANY

1901-1941 Carroll Avenue • Chicago 12, Illinois

For greater safety... more mileage... specify CLEVELAND TIRE CHAINS!



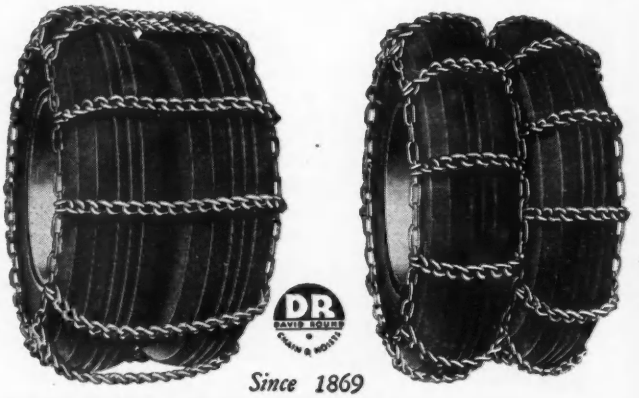
WHEN roads are a sheet of ice . . . when mud or snow is deep, Cleveland Tire Chains guard the lives of your drivers and protect your trucks against damage.

Cleveland Sterling-Wearwell Chains are available in regular and extra heavy types (single and dual pneumatic) to fit every truck. Extra life . . . more positive traction . . . added service satisfaction are built into every link. Cleveland chains wear . . . and wear!

Cleveland truck tire chain production is now at an all-time high. However, pent-up wartime needs indicate that the supply of quality tire chains may again fall short of the demand. Therefore, we suggest that you place your order for your winter requirements with the Cleveland dealer as soon as possible.

Sterling Wear-Well
4-link spacing dual pneumatic truck chain

Sterling-Wearwell
dual pneumatic truck chain with triple side chain



Since 1869

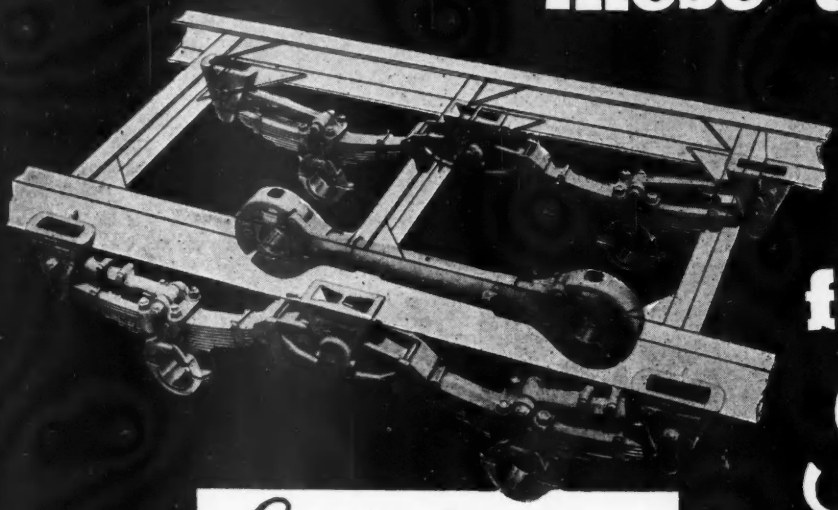
CLEVELAND CHAIN

The Cleveland Chain & Mfg. Co.

Cleveland 5, Ohio

Associate Companies: David Round & Son, Cleveland 5, Ohio • The Bridgeport Chain & Mfg. Co., Bridgeport 1, Conn. • Seattle Chain & Mfg. Co., Seattle 8, Wash. • Round California Chain Co., So. San Francisco and Los Angeles 54, California Woodhouse Chain Works, Trenton 7, N. J.

Performance and Service... PROVE these are good reasons for using Standard UTILITY Tandem Units



- NO WHEEL BOUNCE OR BRAKE CHATTER DUE TO ELIMINATION OF WEIGHT TRANSFER ON APPLICATION OF BRAKES.
- LIGHTER WEIGHT DUE TO SIMPLICITY OF PERFECTED DESIGN AND FEW NUMBER OF PARTS REQUIRED.
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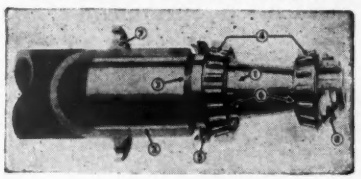
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AXLES BRAKES FORGINGS TRAILER PARTS

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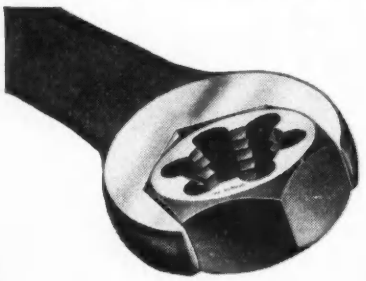
Nearly 1,000,000 square feet of manufacturing space in two modern, high-precision plants manned by top-skilled New England workers . . . plus 86 years of cutting tool "know-how" that began with the original inventor of the twist drill . . . that's the "home and family background" of this Van Norman line of Cutting Tools for the automotive service industries.

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Left: Jobber's Display of Van Norman Cutting Tools.



Above: Hex Rethreading Dies, used either with die stock, open end wrench, or sockets.

Right: No. 1340 Straight Shank Drill.



Left: No. 1040 Hand Tap.

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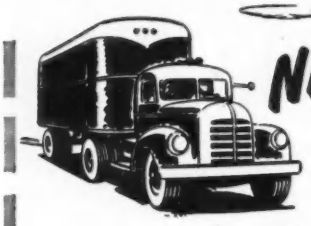
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G&O
Radiators
84th Year

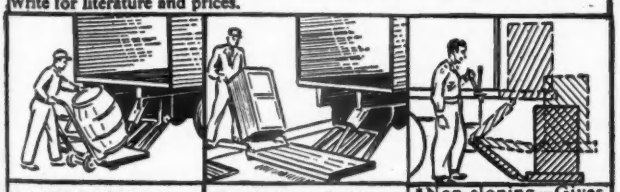
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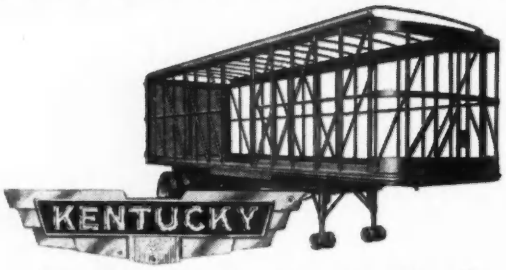
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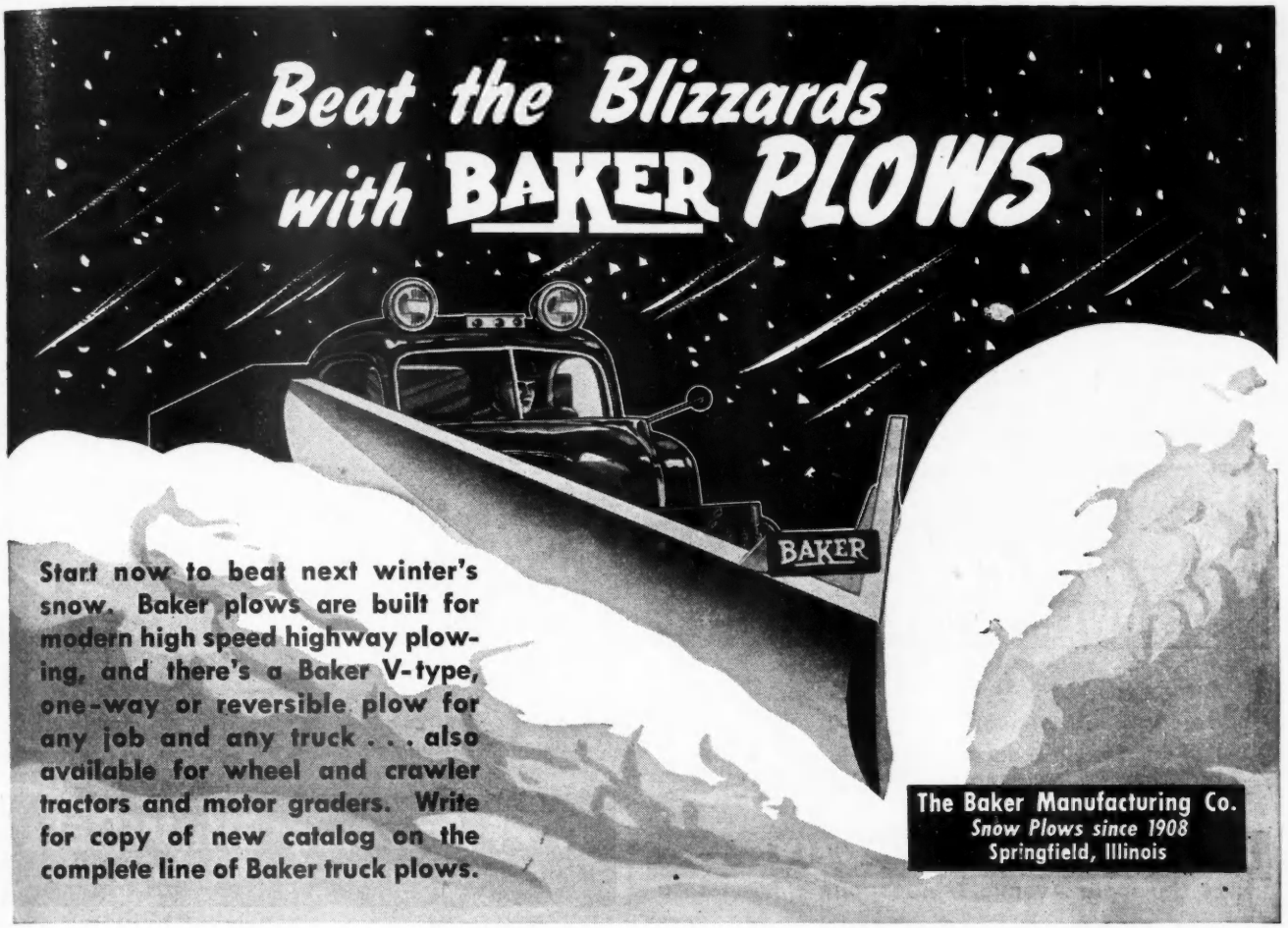
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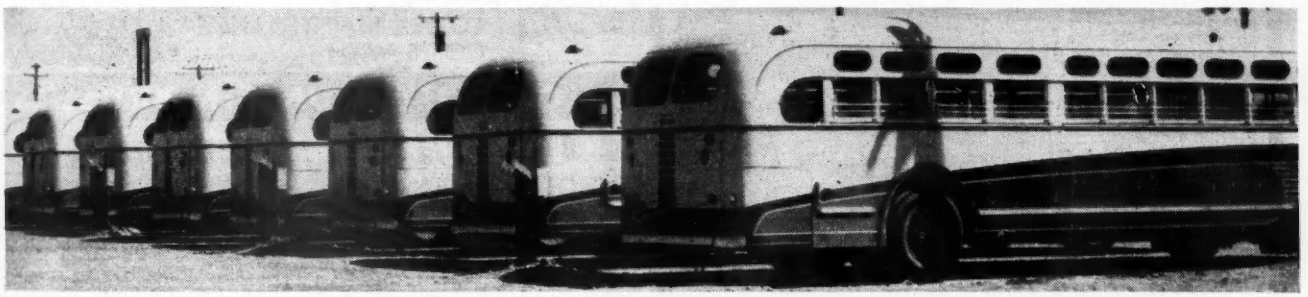
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Springfield, Illinois



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REG. U. S. PAT. OFF.

No heated terminal buildings, and no cold starts. Press the starter, and the engine starts instantly, already warmed up, with full power, ready for the road. Engine wear is reduced; batteries last longer; fuel consumption is decreased.

That's what KIM Hotstart means to this fleet of buses operating in the Pacific Northwest where winter temperatures often range from 10 above to 10 below zero.

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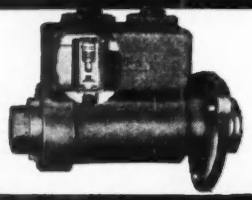
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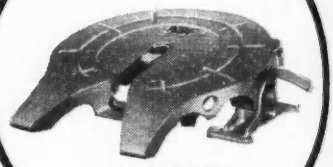


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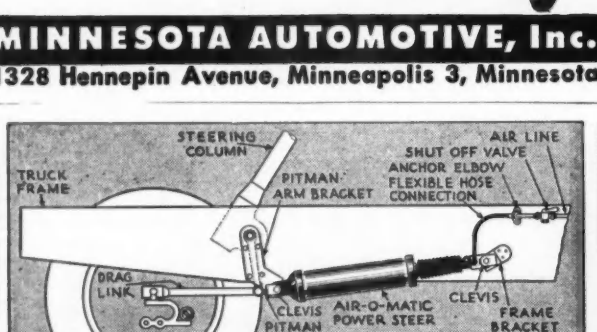


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A·S·F *Safety* 5th WHEEL

Automotive Division · American Steel Foundries

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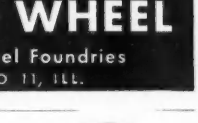
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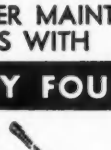
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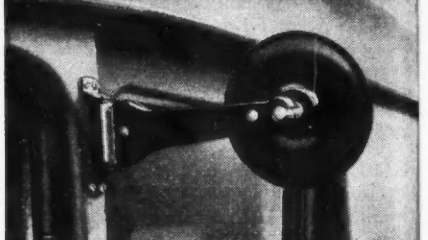


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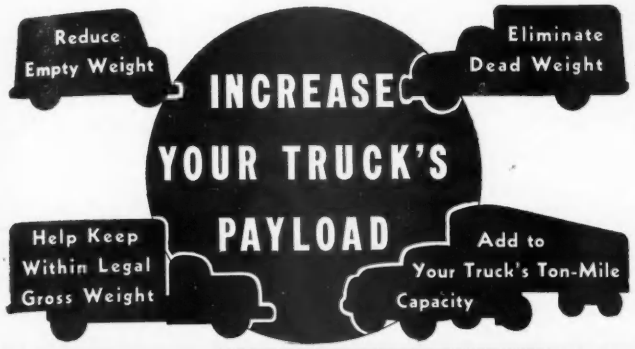
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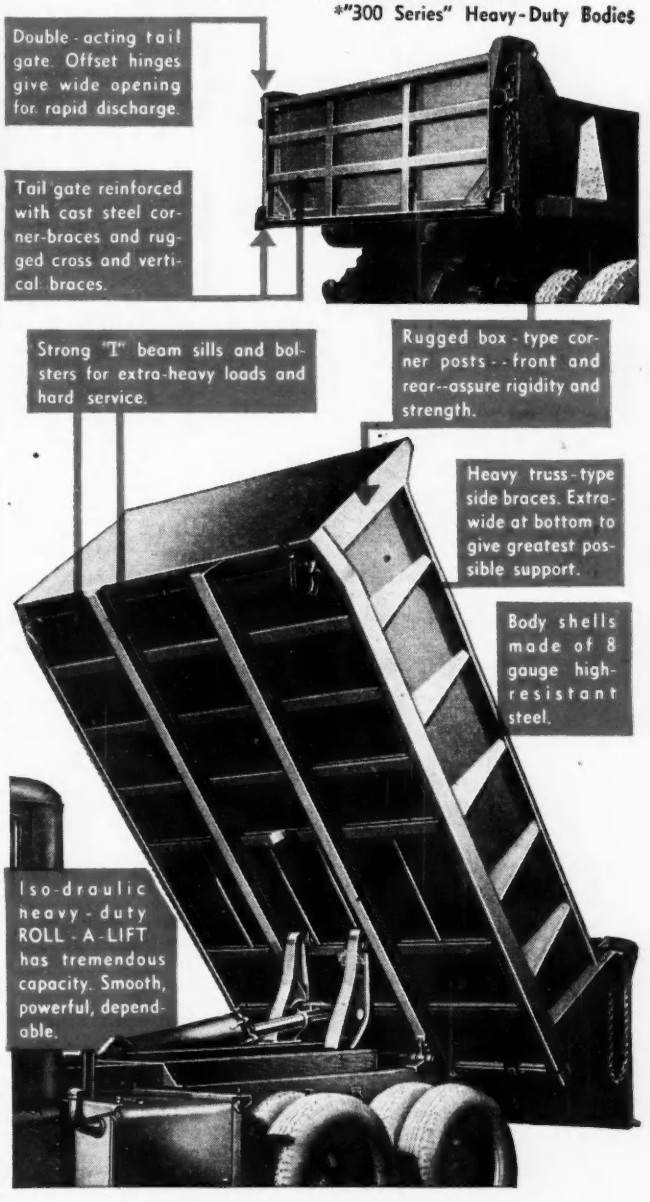
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Index to Ad

This Advertisers' Index is published as a co of the advertising contract. Every care w rectly. No allowance will be made for er

AC Spark Plug Division.....11-123
Air-O-Matic Power Steer Corp. 226
Air Reduction Sales Corp. 110
Albertson & Co., Inc. 170
Aluminum Co. of America 117
American Brakeblok Div. 111
American Chain & Cable Co., Inc. 162-194
American-Coleman Co., The... 213
American Grease Stick Co. ... 126
American Hammered Piston Rings 40-41
American Hoist & Derrick Co. 156
American Steel & Wire Co. ... 58
American Steel Foundries 226
Anthony Co. 221
Artisan Products, Inc. 155
Auto-Lite Battery 8-9-146-147
Auto Specialties Mfg. Co. ..184-185
Autocar Company, The 26
Automotive & Aircraft Div. American Chain & Cable Co. 194
Automotive & Marine Products Corp. 200

Baker Mfg. Co., The 225
Bear Mfg. Co. 190
Bendix Aviation Corp.,
Bendix Products Div. 89
Eclipse-Pioneer Div. 20
Marshall-Eclipse Div. 129
Zenith Carburetor Div. 118
Biederman Motors Corp. 150
Blackhawk Mfg. Co. 51
Blood Bros. Machine Co. 172
Bostrom Mfg. Co. 198
Bower Roller Bearing Co. 59
Braden Winch Company 173
Brown Trailers, Inc. 159
Buckeye Iron & Brass Wks. 224
Buckingham Mfg. Co., Inc. 224
Budd Co., The.....126-127
Buell Mfg. Co. 121
Burd Piston Ring Co. 103

Campbell Chain Company 222
Carnegie-Illinois Steel Corp... 58
Casite Corporation, The 151
Cemco Industries, Inc. 210
Champ-Items, Inc. 190
Champion Spark Plug Co. 14
Chrysler Corp. (Parts Div.) .. 44
Clark Equipment Co. 119-120
Cleveland Chain & Mfg. Co. .. 216
Cole-Hersee Co. 188
Columbia Steel Co. 58
Columbus-McKinnon Chain Corp. 122
Cooper Tire & Rubber Co. 226
Crescent Co., Inc., The 188
Curtis Pneumatic Machinery Div. Curtis Mfg. Co. 188

Dayton Steel Foundry Co. 208
Delco-Remy Div. G. M. 158
Deluxe Products, Corp. 188
DeVilbiss Company, The 190
Dodge Div., Chrysler Corp. 2nd Cover
Dole Valve Co., The 216
Dorsey Trailers 196
Dow Chemical Co., The 137
Drum Jack Corporation 134
Duplex Truck Co. 190
du Pont de Nemours & Co., Inc., E. I. 167

Eaton Manufacturing Co. ..101-102
Eberhard Mfg. Co. 128
Electric Auto-Lite Co. 8-9-146-147
Electric Storage Battery Co., The 97

F. A. B. Manufacturing Co. ... 144
Federal-Mogul Service 135
Federal Motor Truck Co. 99
Fitzgerald Mfg. Co., The 149
Flour City Brush Co. 226
Ford Motor Co. 17-131
Four Wheel Drive Auto Co. Back Cover
Freedom-Valvoline Oil Co. ... 209
Frink Sno-Plows, Inc. 188
Fruehauf Trailer Co., The 207
Fuller Mfg. Co. 16

GMC Truck & Coach Div. 50
G & O. Mfg. Co., The 221
Gatke Corp. 190
General Tire & Rubber Co., The 32
Globe-Union, Inc. 166
Goodyear Tire & Rubber Co... 7
Greyhound Bus Corp. 229
Griffin Lamp Co., The 178
Grote Mfg. Co., Inc., The..... 124
Guide Lamp Div., G. M. 197
Gulf Oil Corp. 191

Hansen Mfg. Co., A. L. 171
Harrison Radiator Div. 182
Haskelite Mfg. Corp. 202
Hastings Mfg. Co. 143
Hein-Werner Corp. 169
Hendrickson Motor Truck Co. 148
Holley Carburetor Co. 46
Hollingshead Corp., R. M. ...54-55

Imperial Brass Mfg. Co., The.. 104
Independent Pneumatic Tool Co. 206
Inland Manufacturing Div. ... 204
International Harvester Co. .. 64

Johns-Manville Corp. 211

K-D Lamp Company 116
Kelly-Springfield Tire Co., The 47
Kelsey-Hayes Wheel Co. 62
Ken Tool Mfg. Co., The 188
Kentucky Mfg. Co. 224
Kester Solder Co. 130
Kim Hotstart Mfg. Co. 225
Kingham Trailer Co., Inc. 181
Kinnear Mfg. Co., The 190
Kold-Hold Mfg. Co. 114
Koppers Co., Inc., Piston Ring Div. 40-41

Laitner Brush Co. 156
Libbey-Owens-Ford Glass Co. 193
Lindsay Corp. 105
Lintern Corporation, The 175
Lipe-Rollway Corporation 205
Loney Co., Harley C. 215
Long Mfg. Div. 161

McCord Corporation 188
McInerney Spring & Wire Co.. 223
M & H Parts, Inc. 190
Mack Trucks, Inc. 95
Magnus Chemical Company... 140
Marion Metal Products Co.... 145
Marmon-Herrington Co., Inc.. 21
Mechanics Universal Joint Div. 227
Mid-Continent Petroleum Corp. 214
Midland Steel Products Co.... 34
Milwaukee Dustless Brush Co. 195
Minnesota Automotive, Inc.... 226
Molded Materials Div. 106
Monmouth Products Co. 188
Monroe Auto Equipment Co... 230
Moraine Products Div. 212
Mt Vernon Woodberry Mills.. 163

Nash Brothers Co. 136
National Automobile Dealers Used Car Guide Co. 224
National Tube Co. 58
Neapco Products, Inc. 152
New Britain Machine Co. 190
Norlipp Co., The 203

Oakite Products, Inc. 222
Ohio Oil Co., The 61
Oshkosh Motor Truck, Inc.... 43
Owens-Corning Fiberglas Corp. 201

Packard Electric Div. 186
Parish Pressed Steel Co. 139
Pedrick Piston Rings 23
Perfect Circle Corporation.... 63
Perfection Steel Body Co., The 227
Permalux Company, The 188
Permanente Metals Corp...176-177
Permatex Co., Inc. 1
Perry Co., The 226
Prest-O-Lite Battery Co., Inc. 113
Purolator Products, Inc. 199

Advertisers

as a convenience, and not as part care will be taken to index cor- for errors or failure to insert

Quaker State Oil Refining Corp. 183

Ramsey Corporation 28
Raybestos Div. of Raybestos-Manhattan, Inc... 37
Reeves Brothers, Inc..... 192
Reo Motors, Inc.....Front Cover
Ross Gear & Tool Co..... 56

SKF Industries, Inc..... 33
St. Paul Div., Gar Wood Industries, Inc. 3
Sealed Power Corp. 91
Service Recorder Co., The..... 112
Shand & Jurs Co..... 142
Shuler Axle Co., Inc. 39
Signal-Stat Corporation 132
Sinclair Refining Co.....164-165
Snap-on Tools Corp..... 190
Snyder Tank Corporation..... 190
Socony-Vacuum Oil Co., Inc..24-25
Spark O-Liner Corp..... 219
Sparks-Withington Co., The... 220
Spicer Mfg. Div. of Dana Corp. 153-154
Springfield Electrical Specialties, Inc. 226
Standard Forge & Axle Co., Inc. 217
Standard Motor Products Co... 138
Standard Oil Co. (Ind.)..... 31
Stewart-Warner Corp. 160
Studebaker Corp. 93

Tennessee Coal, Iron & Railroad Co. 58
Texas Co., The..... 4-5
Thermoid Company 96-125
Thompson Products, Inc..... 180
Tide Water Associated Oil Co. 157
Timken Roller Bearing Co., The 188
Trailmobile Co., The..... 187
Trico Products Corp..... 174
Trucktor Corp., The..... 19

U. S. Axle Co., Inc..... 221
Union Metal Mfg. Co..... 36
United States Steel Co. 58

Van Norman Co.....29-218
Vickers, Inc. 141

Wagner Electric Corp..107-133-189
Walker Manufacturing Co....12-13
Walter Motor Truck Co..... 57
Waukesha Motor Co..... 188
Wayne Pump Co., The..... 179
Weed Chains 162
White Motor Co., The..... 109
Whitehead Stamping Co..... 226
Wilkening Mfg. Co..... 23
Willard Storage Battery Co., 3rd Cover
Wiry Joe 188
Wohlert Corp. 188
Wolf's Head Oil Refining Co., Inc. 53
World Bestos Corp..... 115

York-Hoover Corp..... 60

Zollner Machine Wks..... 168

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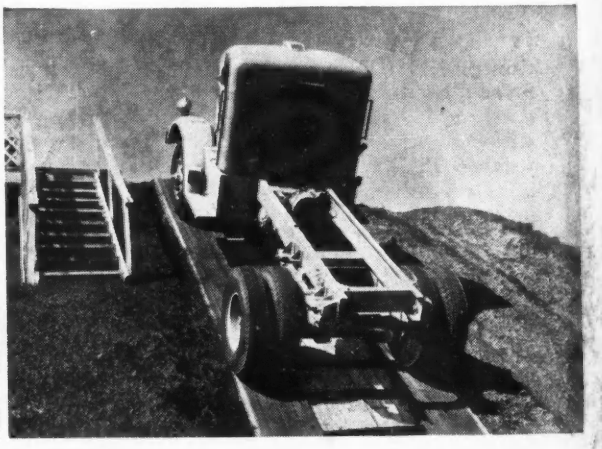
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